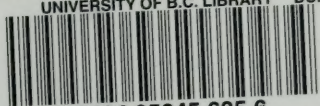


UNIVERSITY OF B.C. LIBRARY DUPL



3 9424 05045 635 6

STORAGE ITEM
PROCESSING-ONE

Lp1-D17A

U.B.C. LIBRARY


THE LIBRARY



THE UNIVERSITY OF
BRITISH COLUMBIA

Gift of
Mary G. Fyfe-Smith

FLOWERING TREES
AND SHRUBS: A
Handbook for Gardeners



Digitized by the Internet Archive
in 2010 with funding from
University of British Columbia Library



Romneya Coulteri.

A HANDBOOK OF
FLOWERING TREES
:: AND SHRUBS ::
FOR GARDENERS
BY R. C. NOTCUTT. EDITED
BY THE LATE W. R. DYKES

LONDON: MARTIN HOPKINSON
& COMPANY LTD: 14 HENRIETTA
STREET, COVENT GARDEN, W.C. 1926

Printed in Great Britain.

PREFACE

IN the following pages I have endeavoured to describe some of the best known families of the hardy flowering shrubs, which are attracting so much attention from gardeners that they may well claim to be the most popular of all branches of gardening at the present time. I am sorry that owing to space I have had to omit many beautiful families, in particular the genera of *Spiraea*, *Weigelia*, *Rhus*, *Philadelphus*, and *Lilac*.

It is not surprising that the flowering shrub section of the garden should have this popularity, for it has the great advantage of being economical in labour and of providing an interest spread over the greater part of the year, firstly with the flowers, later on with the berries and fruit, and lastly in the gorgeous autumn colouring of the foliage.

In order that amateurs who are taking up this branch of horticulture may find my descriptions and notes helpful, I have considered the needs of the practical gardener as far as possible and have avoided the use of difficult botanical terms.

In all cases of naming I have followed the Kew Hand List. I have also often referred for guidance to Mr. W. J. Bean's "*Trees and Shrubs, hardy in the British Isles*," the most valuable book ever written on this class of plants and one which has done much to encourage the culture of these shrubs and trees.

The names of certain shrubs have unfortunately been much confused, the same plant being known under two or more names, which is very misleading to the beginner. Take for example the common Lilac—*Syringa vulgaris*—this is often ordered by the uninitiated with the idea of receiving, not a Lilac, but the old fashioned, sweet-scented *Syringa* (*Philadelphus coronaria*). I hope this book will help to prevent disappointment due to such mistakes.

Considerable space is devoted to the description and cultivation of plants that will thrive on the sea coast. This is a section of gardening in which a good deal of care (and experience) is necessary. There are many shrubs that grow and flourish inland which will be found entirely unsuitable for a seaside garden where they are exposed to strong salt winds from the sea. However, experience has shown that there are many beautiful shrubs that will resist these winds and indeed thrive better on the coast than further inland, where they are subjected to a mild, damp air during summer and autumn and far sharper frost in mid-winter and spring. This is largely accounted for by the plants forming hard, short growths which are fully ripened by the autumn sunshine thus enabling them to stand the cold of winter far better than more softly grown plants in districts inland.

Nothing is more disappointing than to spend time and money on plants only to find, after the first cold spring and when a whole year has been lost, that they are quite unsuitable for the place in which they have been planted.

I am greatly indebted to Mr. Collingwood Ingram for his chapter on Japanese Cherries, a group of plants which he has so carefully studied and cultivated. He is now looked to as the best authority on these delightful spring-flowering shrubs. I am also much indebted to Mr. Osborn of Kew, Mr. Gould of Wisley, and to my nursery foreman, Mr. E. Thatcher, all of whom, with their long practical experience, have been of the greatest help. Lastly I am deeply grateful to the late Mr. W. R. Dykes, whose tragic death occurred as a result of a motor accident just as we were completing the last few pages. I shall always bear a debt of gratitude to his memory as without his help I should never have attempted this work.

R. C. NOTCUTT.

WOODBIDGE,

May, 1926.

CONTENTS

	PAGE
Chapter I. INTRODUCTION . . .	I
„ II. BERBERIS . . .	21
„ III. BUDDLEIAS . . .	51
„ IV. CEANOTHUS . . .	57
„ V. CISTUS AND HELIANTHEMUMS .	65
„ VI. COTONEASTERS . . .	82
„ VII. CYTISUS AND GENISTA . . .	102
„ VIII. PRUNUS . . .	124
„ IX. FLOWERING CHERRIES . . .	135
„ X. PYRACANTHA . . .	156
„ XI. PYRUS . . .	161
„ XII. VIBURNUMS . . .	172
„ XIII. SEASIDE PLANTS . . .	192
INDEX . . .	243

LIST OF ILLUSTRATIONS

1.	Romneya Coulteri	.	.	.	<i>Frontispiece</i>	
2.	Berberis polyantha	.	.	.	<i>to face p.</i>	37
3.	Berberis pruinosa	.	.	.	" "	39
4.	Berberis rubrostilla	.	.	.	" "	41
5.	Buddleia alternifolia	.	.	.	" "	52
6.	Buddleia variabilis magnifica	.	.	.	" "	55
7.	Ceanothus papillosus	.	.	.	" "	61
8.	Helianthemum algarvense	.	.	.	" "	76
9.	Cotoneaster frigida—in flower	.	.	.	" "	90
10.	Cotoneaster frigida—in berry	.	.	.	" "	92
11.	Spartium junceum	.	.	.	" "	122
12.	Prunus cerasifera Blireiana	.	.	.	" "	127
13.	Prunus persica, <i>var.</i> Clara Meyer	.	.	.	" "	132
14.	Prunus serrulata "Ojochin," <i>syn.</i> Senriko	.	.	.	" "	136
15.	Prunus spinosa, <i>var.</i> purpurea	.	.	.	" "	138
16.	Prunus subhirtella autumnalis	.	.	.	" "	154
17.	Pyrus Eleyi—in fruit	.	.	.	" "	163
18.	Viburnum Carlesii	.	.	.	" "	176
19.	Viburnum rhytidophyllum	.	.	.	" "	187
20.	Viburnum plicatum	.	.	.	" "	190
21.	Abutilon vitifolium	.	.	.	" "	201
22.	Cupressus macrocarpa :					
	Tree twenty years after planting	.	.	.	" "	204
	Hedge three seasons after planting	.	.	.	" "	204
23.	Escallonia Donard seedling	.	.	.	" "	208
24.	Senecio Greyi	.	.	.	" "	235

Flowering Shrubs

I.

PLANTING, PRUNING, GENERAL TREATMENT AND PROPAGATING.

WITHIN the last fifty years the planting of our gardens has undergone many changes. During the period from 1830 to 1880 the gardener's choice of shrubs was limited to such evergreens as Laurels, Aucubas and Hollies, mostly clipped into tight balls and thus losing all their natural grace. Conifers were also very popular and these with neat rows of scarlet Geraniums, yellow Calceolarias and blue Lobelias made the perfect garden of the mid-Victorian era.

With the increase of gardening periodicals and the publication in 1883 of W. Robinson's book, "The English Flower Garden," a change began. The first result was that much more interest was taken in herbaceous plants, and roses became more popular. It became fashionable to have beds of roses, each of one variety, and such beds became more and more usual at the expense of carpet and formal bedding. Towards the end of the nineteenth century and at the beginning of the twentieth, flowering shrubs also began to gain in popularity, and since the war this has been still more

marked. It may be explained by two facts. In the first place they are both beautiful and interesting and secondly they are easy to cultivate. Once shrubs have been properly planted the cost of upkeep is small compared with that of plants which must be housed in the winter in heated greenhouses. In fact, a garden of flowering shrubs goes a long way towards solving the labour difficulty. Moreover in recent years there has been an immense increase in the number of new kinds of flowering shrubs available and the majority of them have been introduced as the result of the journeys of E. H. Wilson, George Forrest, and the late Reginald Farrer. These collectors have penetrated into vast unknown regions in China, Japan and Tibet, where the winters are as cold as our own, so that the majority of these new comers have quickly adapted themselves to our fickle climate, though some would doubtless flower better than they do if our summers were as hot as those which ripen their growth in their native homes.

Some of these recent introductions are already so well known that it is difficult to realize that some fifteen or twenty years ago the beautiful *Viburnum Carlesii*, with its fragrant white blossom, and the majestic purple spikes of the *Buddleias* were unknown. Perhaps the finest of all are the members of the new race of deciduous *Berberis*, gorgeous with their brilliant autumn foliage and sprays of coral-red fruit. In the Royal Horticultural Society's gardens at Wisley they are to be seen growing to perfection in the light, sandy soil and the masses of berries provide a wealth of colour in autumn, unsurpassed by any other genus.

Recent years have also seen many additions to the list of Brooms. The showy *Cytisus Andreanus* was rarely seen before 1870 and this has since been followed by *Cytisus kewensis*, with its cascades of creamy white flowers and still more recently by the delightful Cornish seedling, known as Cornish Cream.

Fortunately it is not only shrubs that flower in spring and summer that have been introduced recently to our gardens but such good things as *Viburnum fragrans* with its sweet-scented blossoms in mid-winter and *Prunus subhirtella autumnalis*, which sends forth its little, blush-white, scented flowers in profusion throughout November and December.

After these come the early spring flowering shrubs such as the double pink Cherries of Japan, with their bronzy foliage adding to the delight of the flowers and the form of Purple Plum, *Prunus Blirieana*, similar in its bronze foliage to *P. cerasifera* var. *Pissardii*, which is covered in spring with the most attractive salmon-pink blossoms. Such flowers are always doubly welcome, coming as they do when the bleak, dreary days of winter are past and when there is a promise of better days to come. Among the Crab Apples (*Pyrus*) there have been in recent years many acquisitions, *Pyrus Eleyi* being the most striking of all, for, in addition to the deep red flowers and dark foliage, the red Cherry-like fruits are most attractive in early autumn.

These can be grown in bush form, but are most effective as standards. These Cherries and Crabs seldom become really large trees, but, if grouped amongst flowering bushes, or grown as single specimens

they are seen to great advantage, especially if they are so planted that their flowers are seen against a dark background.

Another interesting family of Chinese plants comprises the many species of *Cotoneaster*, which deserve to be even more widely planted than they are. Many are brilliant with scarlet berries in autumn and, if sprayed with quassia, to make them distasteful to birds, will continue to give a blaze of colour far into the winter.

While explorers of the borders of China and Tibet have been busily introducing to our gardens some of the seemingly inexhaustible botanical treasure of that region, hybridizers have not been idle. Foremost among them we must place Lemoine of Nancy, who will always be remembered for the many varieties of Lilac, *Philadelphus* and *Weigelia*, which he has introduced into commerce. All are hardy and the majority of them are easy to cultivate, while those in whose garden the soil is free from lime have also at their disposal the innumerable *Rhododendron* species and hybrids, which have been either introduced from China or raised from crosses made in this country.

PREPARATION OF THE GROUND AND PLANTING.

As flowering shrubs should be permanent when once planted, it is most essential that the ground should be properly prepared beforehand.

Time and money spent in proper preparation are true economy in the long run. The shrubs grow more vigorously and the colour of their foliage is richer when

they are planted on deeply cultivated soil than when they are forced into small holes in hard ground. It is frequently found that under a few inches of top cultivated soil there exists a pan or hard layer, often only a few inches in thickness, but occasionally as much as a foot or more. Below this pan the ground generally becomes soft again but, until this hard layer is thoroughly broken up, no trees will grow freely. The best possible preparation is to have all the ground intended for planting double-dug to the depth of 18 or 24 inches by the process known as "bastard trenching." This is cheaper in labour and on poor land often preferable to trenching. Bastard trenching is carried out in the following way. The piece of ground is first divided lengthwise into two and a trench two or three feet wide and one spit deep is opened across the end of one half. The soil removed is placed at the end of the other half as this is much less laborious than wheeling it away to the far end of the piece of ground. The bottom of the trench is then thoroughly dug and deeply broken up, after which it is covered by the soil thrown out of the next trench. The work proceeds up one side of the piece of ground and down the other side to the end at which it started, where the last trench is filled in with the soil thrown out of the first.

Each trench should be of the same width and it is best to mark them out with a line so as to keep the work straight and regular. If the ground is covered with grass, the sods should be skimmed off about two inches thick and placed upside down on the lower spit in each trench before the top spit is thrown upon them.

Ground thus treated allows surface water to drain away more readily and at the same time retains more moisture in dry weather than hard ground. Plants are thus enabled to withstand drought far better than when planted in unbroken ground or in soil of which only the top few inches have been dug.

In dealing with poor, or perhaps with almost any land it is most desirable that some form of stable or good farmyard manure should be added, and well mixed in while the digging is in progress. This is certainly the best time for manuring, for, although manure can be dug in after planting with good results, there is never quite the same opportunity as during the process of digging.

Again, this manure has a double purpose ; it forms a store of food and nourishment for the plant and also holds a store of moisture, which is the salvation of many freshly-planted shrubs, through a spell of drought in the early summer.

In the same way a light mulch of stable manure on the surface close round the young shrubs is an immense help. The winter rains wash in the goodness of the manure, which also tends to prevent severe frost from penetrating down to the roots, and to keep the roots moist during a dry spell. Unfortunately in these days it is becoming increasingly difficult to obtain good manure at a reasonable price.

In dealing with heavy clay land, leaf mould, not too much decayed, is very valuable. It is also an admirable mulch—but on light, dry soil nothing really takes the place of farmyard manure.

Chemical manures are sometimes recommended, but they should be applied cautiously when dealing with transplanted shrubs and should never be used in hot, dry weather. Bone meal or flour is one of the best forms and gives good results. It acts slowly but the tree feels the benefit for a long time.

Deep planting should be avoided. It is usually quite easy to see the mark on the stems of the trees and shrubs which shows the depth at which they have previously been planted and this mark should be at the ground level when the trees are replanted. When trees are planted too deeply, with the mistaken idea of avoiding the trouble of staking, the obvious effect is that the roots fail to get the requisite air and warmth. They remain in the cold subsoil in the spring, whereas, if planted at the right depth, they get a certain amount of warmth from the sun which encourages good root action.

All shrubs should be firmly planted, the ground being well trodden down round the stem. If the plants are tall and likely to blow about in a high wind, it is necessary to stake them. In staking, always tie firmly so that the shrub and stake rock together without chafing. In many cases stakes are only required for a few months. If it is found necessary to leave them longer, the string should be cut and re-tied, at least once a year. Soft tarred cord, about as thick as a pencil, is the best tying material, with a piece of sacking wrapped firmly round the stem of the tree so as to avoid cutting into the bark. Nothing is worse than allowing freshly planted trees to sway about in the wind, thus forming a hollow in the

earth around the stem, which prevents the plant from forming fresh roots as quickly as it otherwise would. If a space should be noticed round the stem, the soil should at once be filled in and made firm.

TIME FOR TRANSPLANTING.

Speaking generally, deciduous trees and shrubs may be safely moved at any time between the middle of October and the middle of March—preferably during November and the first half of December. In average seasons there is a danger of severe frost and snow from Christmas till the middle of February. Trees and shrubs should not be transplanted when the ground is excessively wet and cold. If they arrive from a nursery when the ground is frozen, the bundles should not be opened so as to expose the roots to the frost. The best plan is to lay the roots in soil in a shed or in some sheltered place until the ground has thawed and planting is once more possible.

In the case of Evergreens, the transplanting season is longer, although mid-winter should be even more strictly avoided than in the case of deciduous plants. The period from the beginning of October to the middle of November is an excellent time for the work and so is April when the ground is warmer. In some instances the time may be extended to the middle of May.

It is now becoming a general practice in most nurseries to keep in pots many plants that are difficult to transplant. All varieties of *Ceanothus* and *Cistus*, and the Brooms should always be obtained in this way. In dealing with pot plants it is most essential that they

should not be dry when planted out. This particularly applies to plants that have been received from a distance. If the plants are dry when they are received, soak them in a pail of water before placing them in the ground. If planted with the roots really dry, no amount of watering afterwards will penetrate the ball. This is often the cause of failure, and the nurseryman is blamed, though the fault is the planter's.

GROUPING.

There are many ways of planting flowering shrubs. Grouped in a broad border, five or seven being placed together and with a fair amount of room left for development, they display themselves well, and a few flowering standards placed singly here and there will produce a pleasing effect. This massing is more advantageous than the old way of using single plants, one here and another of the same variety a little further on. Even rows should also be avoided. It is a difficult matter to give a regular distance for planting apart, but six feet is a fair average, while the small groups in the front should not be more than four feet from plant to plant, that is, when dealing with the smaller *Berberis*, *Brooms*, *Cistus*, etc. Again, a strong plant like a *Buddleia* will soon cover an area 8 or 10 feet in diameter. When shrubs are planted to form a screen it is always well to use a fair proportion of evergreens, though the result will be less dull or monotonous if some of the more brilliant deciduous species are placed among them.

Many plants seem to thrive best when planted some-

what thickly, but they require watching, and thinning must not be delayed too long. It is an excellent plan when arranging plants to have a bundle of cheap plants like Oval Leaf Privet, Berberis, Cotoneaster Simonsi, etc., which may be used as nurses, just to fill up the spaces between the choicer shrubs and to be cut out when the choicer specimens require more room.

TREATMENT AFTER PLANTING.

Once the shrubs are planted and staked, where necessary, the after cultivation is comparatively simple. The main point is to keep the land stirred and free from all weeds either by hoeing or by occasional light forking. In this way the air penetrates into the soil and enables the young trees to withstand drought and greatly encourages growth.

If two pieces of ground were planted in the same way, one being left without weeding or hoeing and the other kept clean and the soil stirred, the difference in growth at the end of two years would be astonishing.

During the winter the land occupied by shrubs should be carefully forked over so as not to damage the small fibrous roots by digging too closely to the stems. This is all that is necessary until the surface begins to dry in the spring, when the hoe must again be brought into use.

WATERING.

This is a vexed question, many successful cultivators of shrubs declaring it to be quite unnecessary, if the ground is properly cultivated. However, in some soils

and in some seasons watering is sometimes necessary. It is quite true that once shrubs are well established watering is seldom required. With freshly planted shrubs and particularly with evergreens, however, a good soaking or two in early summer often saves the life of a valuable plant. In late spring watering is most essential if the weather should set in hot and dry, and again when the plants have been turned out of pots, an occasional watering is most desirable.

It is always better to give a good soaking once a week than a little water each day. Make a slightly raised ring of soil about a foot or two from the stem of the plant so as to form a basin holding several gallons and the effect of the watering will last for days, especially if the surface of the soil is kept loose and not allowed to form a hard crust. An excellent practice, particularly with evergreens, is to syringe or sprinkle overhead from a watering pot with a fine rose each afternoon an hour or two before sunset. This has the effect of freshening up the foliage after a hot, dry day and helps to encourage growth. Where possible rain water which has stood in the open air should be used in preference to that from underground mains, which is usually much colder than the atmosphere.

PRUNING.

Some shrubs need little pruning and others need practically no pruning at all and yet sooner or later if they are to be kept within bounds and if they are not to become mere tangles of dead and living branches, the time will come when some pruning has to be done.

An understanding of the principles of pruning is therefore a necessity if a collection of flowering shrubs is to be maintained in the best possible condition.

One of the worst offenders against all the rules of pruning is probably the jobbing gardener, whose one idea is to take a pair of garden shears and clip all shrubs back indiscriminately at sometime during the winter into tight spheres or square blocks. Imagine the result on the beautiful *Pyrus* (*purpurea*), which flowers from spurs on the old wood but more freely all along the slender branches of the new wood. A shearing in winter will remove practically all the flowering wood and a little observation and thought would show that this tree must be pruned immediately after the flowers fade, so that it has time during the rest of the year to produce and mature new growths which will flower in the following season.

Successful pruning is, in fact, largely a matter of observation and common sense. It will be found, however, that most flowering shrubs fall into one or other of the three following classes :—

1. Those that flower early, in April and May, on the growths formed during the previous year. These should be pruned hard back immediately they have finished flowering and they will then produce and mature flowering branches for the following year. Examples of this class are *Ribes*, *Cytisus*, some *Spiraeas*, *Berberis stenophylla*, *Ceanothus dentatus*, *C. Veitchianus*, *C. papillosus*, *Pyrus floribunda*, etc.

2. Those that flower a little later in May and June on the growth formed during the previous year. If

the pruning of these shrubs is postponed till the flowering is over, it will probably be found that if an attempt is made to cut out the old wood much young growth will be removed with it. If, on the other hand, these shrubs are left unpruned, they will be found to make more growth than will ripen and flower to advantage and the best treatment is therefore to cut out the oldest shoots from the base in early spring. Then strong new shoots will develop and bear flowers in the following year. It might be thought that the pruning of shrubs of this class should be carried out by removing all the oldest shoots immediately they have flowered. Some may, with advantage, be removed then, but if the pruning is very drastic and dry, hot weather follows little new growth may be formed for the next year. It is better therefore to leave most of the pruning until the spring. Examples of this class are *Deutzias*, *Weigelias*, *Philadelphus*, and such *Berberis* as *B. Wilsonae*, *B. aggregata* and others, which are specially valuable for their berries in the autumn.

3. Those that flower in summer or early autumn, generally at the tips of the young shoots produced during the current season. These should be pruned hard back during March, the growths of the previous season being cut back to within an inch or two of the old wood. The pruning must not go beyond this point, for it is dangerous to the life of the shrub to cut it back into the old hard wood unless there is a promising shoot or bud below the cut. To this class belong the *Gloire de Versailles* group of *Ceanothus*, *Cytisus nigri-*

cans, *Hydrangea paniculata*, as well as many of the *Buddleias* and *Spiraeas*.

It follows, therefore, that the greatest care must be taken to ascertain and remember which shrubs flower on the wood of the previous year and which from the tips of the current season's growth. It must be remembered too that all the species of a genus do not necessarily behave in the same way. Thus *Tamarix hispida* flowers in August and, if it is cut back hard in March, it produces fine panicles of flowers in the summer. *Tamarix tetrandra*, however, flowers during early June on the wood of the previous season and should therefore be pruned according to the directions given for dealing with shrubs belonging to the second group.

Again, *Ceanothus Veitchianus* and its allies should be pruned immediately after flowering at the end of May, whereas *C. azureus* and the other members of its group which flower from July onwards at the tips of the new growths, should be pruned in March.

Young standard trees need careful treatment in their early years but, once a shapely frame-work has been obtained, little pruning will be required except to cut away any thin, weakly branches and those which crowd the centre of the tree by growing across it.

PROPAGATION.

There are four ways of propagating shrubs, by cuttings, by seeds, by layering, and by grafting or budding; of these four systems the first two are by far the simplest.

The method of increasing plants by cuttings has been practised from the very earliest times. The ancient Greeks, indeed, seem to have been fully alive to this method of increasing plants, for the following is a note quoted from the "Legacy of Greece," the work of a Greek writer about 380 B.C. :

"As regards plants generated from cuttings . . . that part of a branch where it was cut from a tree is placed in the earth and there rootlets are sent out. This is how it happens. The part of the plant within the soil draws up juices, swells, and developes a pneuma. The pneuma and the juices concentrate the power of the plant below so that it becomes denser. Then the lower end erupts and gives forth tender roots."

Until quite recent times propagating by cuttings seems to have gone on much as the old Greek describes. Of late years, however, owing to the very careful and thorough work at the Botanic Gardens, Edinburgh, many new ways have been most successfully worked out.

For the actual striking of the cuttings the most approved method is in a frame or greenhouse with slight bottom heat. The great secret of successful propagation is a close, saturated atmosphere which prevents excessive loss of moisture in a greenhouse, the best method is to erect inside it some small frames which can be kept closed.

In some cases it will be found that a swelling or callus forms at the base of the cutting but that no roots are emitted. It was found at Edinburgh that, if the callus

was pared away with a sharp knife, roots then began to grow. In some cases it was even necessary to pare away the callus a second time in order to induce the cutting to root.

At Edinburgh cuttings are most successfully rooted in a practically cold frame in saturated sand, the cuttings being simply pressed into the sand without even the use of a dibber. Once rooted they must be removed to a light, sandy soil and no harm is apparently done, if they are frequently examined, so that they may be potted as soon as roots are being freely formed. The same method should be equally successful in the South, though there seems to be something in the northern climate which is eminently suitable for propagating.

PREPARING THE CUTTINGS.

Generally speaking small cuttings about two or three inches long are the best. In the majority of cases these should be made of the young shoots of the current year. Those made of half-ripe wood from mid-summer onwards should be cut off immediately below a leaf, or pair of leaves, so that the leaf-joint or node forms the base of the cutting, avoiding sappy or soft growths. At Edinburgh cuttings are taken under a joint or node (except in the case of *Clematis*) and all the leaves are left on the shoot, contrary to the usual way of pulling off the first two pairs. The idea which underlies this practice is that the plant will throw off the leaves at the base when it has no more use for them, and that, until it is ready to throw them off, they can help in the life of the plant.

Another excellent plan is to detach the cutting from the parent plant with a thin layer of old wood forming the base or heel. This particularly applies to Brooms, Ceanothus, and hard wooded plants. The cuttings should then be dibbled into the frame itself, boxes or pots. They root quicker when placed close to the edge of the pots. There is an advantage in pots as they can be lifted out of the frame immediately the cuttings are rooted.

SOIL.

The soil in which cuttings are to be struck should be light and should contain a large percentage of sharp sand and have a further layer of sand on the surface. In the case of many of the hard wooded plants, sand alone, without any soil, may be used with good results.

If pots are used fill them one-third full of crocks, then add the soil, pressing it down gently but not too hard.

When only a cloche or hand-light is available the same sandy soil is desirable and it is astonishing what can be rooted in this simple way. They should be kept absolutely close—no air admitted—for the first month or two. When signs of growth are seen admit air gradually until the cuttings will stand it without flagging. They will soon stand without any covering and after a time can be potted up or planted out in a sheltered bed.

LAYERING.

This is a simple way of propagating that rarely fails, though the time which is required varies a good deal—from one to three years.

It is useful where only a small number of plants are wanted. The actual layering consists in fixing a branch firmly in the ground with a peg, covering the portion of the stem where the roots are wanted with three or four inches of soil. It is important that the flow of sap should be checked in the branch to be layered. This may be done in several ways, by cutting a slanting cut or a notch on the underside of the branch, by twisting the stem so that the bark splits, or by binding a piece of wire tightly round it. These are all methods which have proved satisfactory and it is found that roots tend to form more rapidly at the point where the flow of the sap is checked.

It is advisable to use some light soil containing sand or grit for covering the layers for this encourages the emission of roots. They should also be staked so as to keep them firm until they are rooted. This is all that is necessary till the branch begins to grow when it may be cut off from the parent plant.

BUDDING AND GRAFTING.

This is such a technical process that it is not proposed to go into it in any detail. Nearly all flowering shrubs are far better when they can be obtained and grown on their own roots.

Grafting is carried out in the spring while budding must be done in the summer. The latter is the easier method and takes less time than the former.

Many of the choice Brooms, which do not come true from seed, must be grafted in the spring, in gentle heat, using either common Broom or Laburnum for the

stock. The choicer kinds of flowering trees and shrubs, such as many Cherries, and varieties of *Pyrus* and *Prunus* are generally either grafted or budded. The finer varieties of Lilac are often budded on the common Lilac, which is a far better stock than the Privet, but even then a careful watch must be kept for suckers.

SEED.

Raising plants from seed is perhaps the most satisfactory method of propagation. A great advantage of this method is that the plants are generally more vigorous. It has also been the method by which many new species have been raised in this country from seeds sent home from China, Tibet, and other parts of Asia. Owing to the length of the journey and to extreme climatic changes it is almost impossible to import living plants. Even if this were possible, seeds are so much more easily transported that they would be preferred.

Except perhaps in dealing with important seeds of wild species, there is always the chance that in raising seedlings we may find among them hybrids or unexpected variations and herein lies one of the fascinations of seed raising.

When sowing seeds of shrubs it is preferable to use pots, pans, or boxes rather than to attempt to raise them in the open. The early spring is the best time for sowing seeds of shrubs but on no account should they be kept longer than is necessary before sowing, and, if they appear ripe in early autumn, they are best in the ground.

The following points may be of some assistance in obtaining satisfactory germination. Seeds can be raised more quickly with slight bottom heat, 60° F to 70° F being a suitable temperature. Secondly they must be kept moist—for moisture is needed by the seed in one of the first processes of germination, during which the absorption of water by the seed causes it to swell. Then activity occurs in the root tip, which is the first part of the seed to emerge out of its coat. Thirdly the soil should be similar to that recommended for cuttings but with not quite so much sand. Good drainage is equally necessary and the pots should be filled to one third or half their depth with crocks. Above this should come a layer of fibrous soil and finally finely sifted soil, slightly pressed down so that it is fairly firm. Large seeds may be covered to their own depth with sand or fine soil, but smaller seed need a thinner covering till finally with the smallest of all, such as *Rhododendrons*—it is best to sow on the surface. Some growers find it better to sow large seeds in rather coarse loose soil containing a good proportion of sifted leaf soil. This has the advantage that the soil is well aerated—a condition which tends to assist germination. When the surface is covered with very fine soil, it must be kept constantly moist or it will soon dry into a hard crust.

II.

BERBERIS (BARBERRY).

AMONG the many groups of hardy shrubs few can claim as many attractive qualities as the genus *Berberis*. Few genera include, as does that of the *Berberis*, both deciduous and evergreen species, valuable in spring for their flowers and in autumn for their tinted foliage, and, in many cases, for the wealth of brilliant fruits ranging in colour from the bluish-white of *B. pruinosa* through all the shades of pink, scarlet and crimson to rich purplish-black. This genus includes about one hundred and fifty species, many of them variable, and a great number of extremely beautiful hybrids which, while bewildering to the botanist, cannot fail to be a source of pleasure to the garden lover.

The many species of *Berberis* in cultivation have come to us from Europe, America, N. Africa, and Asia. Moreover, seeds recently collected in China have furnished us with many more good garden plants, which, although as yet not widely grown, are rapidly gaining a well-merited popularity.

Botanically the Barberries are not without interest. They are, for the most part, spiny shrubs remarkable for their yellow wood, the colouring matter of which has been used as a dye. Their flowers are yellow, with their parts in threes and consist of six or nine sepals,

six petals, each of which usually bears two small glands at the base, and six stamens. The small greenish ovary ripens into an oval or rounded berry containing one or several seeds. The stamens possess a peculiar irritability. In the newly-opened flower they lie within the concave petals ; but if the base of one of the filaments be touched with the point of a pin the stamen moves forward to the centre of the flower, striking its anther on the stigma. It is probable that this power of movement helps to ensure cross-pollination, for an insect visiting the honey-secreting glands at the base of the petals can hardly attain its goal without disturbing the stamens which close inwards and leave on its body pollen to be carried to another flower.

The spines of the Barberry are modified leaves, as their position on the shoot indicates and the tufts of leaves borne in their axils are in reality very short lateral branches, on which the flowers are borne.

Several species formerly included in the genus *Berberis* are now generally considered as a separate genus *Mahonia* and are characterised by their spineless branches and large compound leaves, which may carry as many as twenty leaflets. The best known of these is the common Mahonia, *B. Aquifolium*, a shrub much in demand for its bronze-tinted foliage.

CULTIVATION.

Barberries grow best in a light loam but they are not particular and succeed in most soils if the drainage is adequate. Most of the species will also thrive well on a chalk soil. *Berberis Aquifolium*, *B. Thunbergii*,

B. stenophylla, and *B. Darwinii* grow well in a dry, sandy soil and will stand exposure well. Many of them will stand a fair amount of shade, and *Berberis Aquifolium* is a most valuable plant when used as a "carpeter" under large trees.

As is the case of most shrubs, *Berberis* lend themselves to planting in groups rather than as single specimens, and a bed of one variety is always most attractive. Some of the dwarf varieties form good rock plants, and are also useful for clothing a bank, while some are valuable as hedge plants. *B. stenophylla* is probably the best for this purpose, being evergreen, of rapid growth, and armed with tiny thorns which make it impregnable. In addition it is particularly charming when in flower in April and May, so that few shrubs offer so many attractions. It is, however, most essential that when it is used as a hedge it should be clipped immediately the bloom is over, since it flowers on the young growths formed during the previous season. If it is pruned immediately after flowering, the plant has time to make new wood which will bear flowers in the succeeding spring and it will not become bare or straggly.

Berberis Darwinii is slower in growth but forms a delightful low hedge and does not require such severe clipping. Moreover it often gives a few flowers again in early autumn. It should be remembered that the various species of *Berberis* are not the easiest plants to move and it is always advisable to obtain plants that have been transplanted within at most two years of the time of planting. Small plants usually move

better than larger specimens and, as they mostly grow rapidly little time is lost by planting young plants and they are certainly less likely to die before becoming re-established. They are best planted early in the autumn or possibly in March, but, in the latter case, they must not be allowed to suffer from drought before they become re-established.

PROPAGATION.

Seed is the best means of propagating *Berberis* and fortunately most species and hybrids are good seed producing plants. This should be sown as soon as ripe either in pots or beds in the open. The little plants root vigorously and should, if they are in pots, be potted on singly or planted out as soon as large enough to handle with ease. Care should be taken that they are not allowed to stay too long in the seed boxes or the long spines make them difficult to handle.

The species may be relied upon to come fairly true from seed but, where many are grown, intercrossing is liable to occur. The hybrids and the varieties with coloured foliage do not come true, and must therefore be propagated by other means. Cuttings of the young shoots may be taken in late summer and if potted very firmly in soil which contains a fair percentage of sharp sand they will root in a cold frame. Where only a few plants are required, layering or division may be adopted. The former method is to be preferred as it does not disturb the parent plant. Shoots of the current season's growth should be pegged down on the surface of the ground so that a few inches of their

length may be covered with soil. This is best done during late autumn and the layers should be well rooted and ready for transplanting twelve months later. Grafting may be done under glass in late summer or early spring on stocks of the common Barberry (*B. vulgaris*). It is not, however, to be recommended, as suckers arise from the stock and are liable to be troublesome.

PRUNING.

The compact growing species such as *B. verruculosa*, *B. Thunbergii*, and *B. Darwinii* should not be cut at all. However, where necessary, March is an excellent time for pruning. Many of the stronger growing species are apt to become rather unshapely after a few years and in this case their outline may, in many cases, be improved by cutting away some of the older shoots. This treatment is also of use in inducing the formation of strong new growths from the base. When this has matured a little further cutting is sometimes necessary to secure the maximum crop of flowers or fruits. These are borne on shoots of the previous season's growth, so that, where new growth is abundant, the shoots which have borne fruits may be cut completely out. The time at which this is done will depend to a certain extent on the duration of the fruits, some of which hang on the plants for several months in mild winters.

LIST OF BERBERIS.

The following is a selection of the most suitable Berberis for various situations.

Evergreen varieties.

B. acuminata.	B. Aquifolium.
B. Darwinii.	B. Gagnepainii.
B. Hookeri.	B. Sargentiana.
B. stenophylla.	B. verruculosa.

For autumn colouring with berries and foliage.

B. diaphana.	B. dictyophylla.
B. polyantha.	B. rubrostilla and Wisley
B. Thunbergii.	hybrids.
	B. Wilsonae.

Dwarf kinds for Rockery.

B. buxifolia var. nana.	B. candidula.
B. stenophylla "Brilliant."	B. Tom Thumb.

For hedges.

B. Darwinii.	B. stenophylla.
--------------	-----------------

Berberis acuminata.

A rather loose growing evergreen shrub reaching a height of 5ft. to 6ft. The young stems are red-brown, armed with long, stiff spines.

Leaves 3ins. to 5ins. long, varying a good deal, narrow, without stalks, dark green above, paler beneath, with spiny margins. They are borne in groups of three or four.

Flowers bronze-yellow, large, each carried on a long

stalk, usually four or five together, and followed by large, oblong, blue-black fruits.

A native of China and one of the best of the black-fruited species. It forms a handsome, vigorous shrub, growing freely, if given a rather moist situation.

Berberis Aquifolium.

An evergreen shrub 3ft. to 4ft. in height. The stems are erect and usually sparsely branched, the lower parts often more or less leafless.

Leaves large and compound, consisting of seven or nine leaflets. These average 2ins. to 3ins. in length and $1\frac{1}{2}$ ins. to $2\frac{1}{2}$ ins. in width, the terminal leaflet being rather larger. They are rather stiff, with spiny-toothed margins, dark green and glossy, the older ones assuming a bronze or reddish-purple hue on the approach of autumn.

Flowers bright yellow in bold terminal clusters in early spring, though a few may often be found soon after Christmas. The fruits are produced in large numbers, their pendant, violet-black bunches being very attractive from September onwards.

This fine plant spreads rapidly by underground suckers, and seems to grow well in any soil. Moreover, it will succeed in shaded positions and is therefore most useful for planting beneath deciduous trees and for naturalizing in woodland.

Berberis aristata.

A deciduous shrub, 8ft. to 12ft. high and as much in diameter. The older branches are of a yellowish-brown

colour, angular, armed with stiff spines most of which occur singly below the leaf clusters.

Leaves 2ins. to 3ins. long, and from $\frac{3}{4}$ in. to 1in. wide, sharply pointed, with spiny edges, occasionally entire ; bright green.

Flowers rich yellow in short stalked sprays of ten to twenty, freely produced in June, followed by red berries covered with a grey-blue bloom.

A native of the Himalayas, it is one of the strongest and best of this group and makes an excellent specimen shrub on a lawn. It is also valuable in the wild garden.

Berberis brevipaniculata.

A deciduous shrub reaching a height of 4ft. to 5ft. The stems are thin and spreading, of a pale brownish-red. Spines in threes, slender, about $\frac{3}{4}$ in. long.

Leaves varying in size, the largest being rather more than 1in. long, oval, with rounded apex, and small sharp teeth on the upper half of each margin, or sometimes unarmed.

Flowers small, pale yellow, in bunches, produced in June and followed by the clusters of brilliant coral-red fruits in September.

This attractive species, which was introduced from China about twenty years ago, has already become the parent of some of the best garden hybrids.

Berberis buxifolia, syn. *B. dulcis*.

An evergreen shrub 5ft. or 6ft. high, forming a close rounded bush. The erect stems are dark brown, bearing groups of short spines and thickly set with the tufts of leaves.

Leaves $\frac{1}{2}$ in. to 1 in. long and half as wide, thick and leathery, with stalks of varying length; dark green and glossy. The leaf margins are spineless, although the apex is usually sharply pointed.

Flowers deep yellow, borne singly on long stalks and open in March. The rather small, purplish-black fruits ripen in August.

Berberis buxifolia var. *nana*. syn. *Berberis dulcis* var. *nana*.

A quaint, dense little shrub. Leaves varying slightly from the type and often larger. Somewhat shy in flowering, its slow growth and neat, compact habit make it a useful rockery shrub.

Berberis candidula.

A slow growing, evergreen species of neat dwarf habit, reaching eventually a height of 2ft. or 3ft.

Leaves $\frac{1}{2}$ in. to 1 in. long, narrow, rich glossy green on the upper surface, silvery-grey on the under side.

Flowers rich yellow, produced singly on thin, short stalks. It is sometimes confused with *B. Hookeri*, but the growth is slower and the leaves are quite distinct.

A native of China, it forms a valuable rock shrub and one well worth a place in the front of a shrub border.

Berberis Chitria.

A sub-evergreen shrub of vigorous growth reaching a height of 10ft. to 12ft. or perhaps more. The stems are stout and erect, light brown at first, assuming later a greyish hue, and armed with rather large spines.

Leaves variable in size, the largest reaching a length of 3ins. and a breadth of $1\frac{1}{2}$ ins., borne in dense tufts, from the centres of which spring, late in June, the pendant sprays of blossom.

Flowers bright, pale yellow, flushed externally with red, in clusters up to 4ins. long, which bear numerous flowers. The fruits are freely borne, but are unattractive owing to their dull reddish colour. A well-grown specimen laden with its golden blossoms is an object of great charm, especially if planted against a background of dark foliaged shrubs.

Berberis concinna.

A neat, deciduous shrub of compact growth reaching a height of about 3ft. The branches are brownish, furrowed, and armed with short, slender spines arranged in clusters of three.

Leaves thick, shiny, deep green above, whitish beneath, rounded, with very shiny margins, and 1in. long, including a distinct short stalk.

Flowers rich yellow, large, borne singly on rather long, drooping stalks and succeeded by large red berries.

This is a very desirable plant, the foliage being effective at all seasons. The white undersides of the leaves provide a pleasing contrast to their richly-coloured upper surface. A charming garden shrub especially when the foliage assumes brilliant tints in autumn. A native of the Himalayas.

Berberis Darwinii.

An evergreen shrub 4ft. to 8ft. or more high, forming a compact shrub with arching branches. The young

shoots are brown and downy and are armed with short, stiff spines in fives.

Leaves $\frac{1}{2}$ in. to 1in. long and $\frac{1}{3}$ in. wide ; abruptly terminated by three spiny teeth, and sometimes bearing one or more spines on each margin, dark green and glossy above, light green beneath. Arranged in flattish clusters of from three to six, from the centres of which spring the pendulous clusters of flowers, each ten to fifteen flowered.

Flowers orange-yellow, reddish outside, appearing in great profusion during April and May, followed by numerous round, dark blue fruits in July.

This species was discovered by Darwin in Chile, being subsequently introduced into this country by Messrs. Veitch. When in flower it is one of the most beautiful, as its brilliant flowers are borne in the greatest abundance. The fruits are also effective, although of an inconspicuous colour, but they fall as soon as thoroughly ripe.

One of the best of all garden shrubs with its cascades of orange-coloured flowers in the spring and again with a few stray flowers in the autumn. It makes a good, little evergreen shrub for a small garden and thrives in almost any soil, even in chalk. It is not quite as hardy as its well-known hybrid, *B. stenophylla*, and should be planted where it gets a little shelter from cold winds.

Berberis diaphana.

A vigorous growing deciduous shrub 4ft. to 8ft. high. The branches greyish and angular ; the spines in groups of three or five about $\frac{3}{4}$ in. long and spreading.

Leaves 1 in. to 2 ins. long and half as wide, generally with spiny-toothed margins.

Flowers yellow, large ($\frac{3}{4}$ in. in diameter), solitary or sometimes a few together, followed by oval red fruit.

This species is very ornamental when in flower, and again in autumn when it assumes a rich colouring. A native of North Western China.

Berberis dictyophylla.

A deciduous shrub often 6 ft. in height, with long, slender, arching stems, at first covered with a white bloom, gradually becoming reddish-brown. The rather thick spines are in clusters of three.

Leaves 1 in. long and $\frac{1}{2}$ in. wide, bright green above, white beneath, with a few sharp teeth on their edges and sharp tips. From the centre of each fresh, green rosette of leaves, there springs in May a solitary, large, primrose-yellow flower. The fruits are of medium size, red, on short stalks.

Although an effective plant when in flower, yet the charm of this species is the glorious autumn colouring, the foliage turning to a rich vermilion, but retaining a few grey leaves here and there. It holds this coloured foliage well into November. As the young wood colours best, this *Berberis* should be cut well back in the spring so as to encourage strong shoots. A native of China.

Berberis Fortunei.

An evergreen species belonging, with *B. Aquifolium* and *B. japonica*, to the *Mahonia* section. It is an upright, sparsely-branched shrub.

Leaves consisting of seven narrow, spiny, leaflets about 3ins. or 4ins. in length.

Flowers yellow, borne in clusters of narrow spikes in October or November ; seldom produces fruit.

A distinct species first found by Fortune in China. It is not quite hardy and should only be planted in a sheltered spot in partial shade.

Berberis Gagnepainii.

An evergreen shrub reaching a height of 6ft. or 7ft., with stiff, erect stems, arching at the top, which, when mature, have a yellowish-grey colour. The slender spines are $\frac{1}{2}$ in. to $\frac{3}{4}$ in. long, arranged in clusters of three.

Leaves 2ins. to 3ins. long, narrow, with undulating, slightly recurved edges, the upper surface dark, dull green, the lower side somewhat lighter and shiny. The apex of the leaf is sharply pointed, and about ten very sharp teeth occur on each leaf margin.

Flowers bright yellow with a tint of green, borne in clusters of five or six, in June. The oval, purplish-black fruits, on stalks $\frac{3}{4}$ in. long, ripen in November.

The fruit stalks, together with the older leaves often assume a reddish tint in the autumn, which with the dark coloured fruit makes it a striking garden shrub. A native of China, easily increased by seed.

Berberis Hookeri.

A round, evergreen bush 4ft. to 5ft. high with stout, angular and arching branches of a greyish or yellowish colour. The spines are $\frac{3}{4}$ in. long and very stiff.

Leaves rin. to $2\frac{1}{2}$ ins. long and $\frac{1}{3}$ in. to $\frac{1}{2}$ in. wide, dark green and glossy above, pale whitish-green beneath, with very spiny, somewhat recurved margins.

Flowers pale yellow borne in clusters of six to ten opening in April or May, to be followed in October by rather long, purplish-black fruits on slender stalks, which often do not fall until the following spring. This species is at its best when covered with its large, early flowers. Although it fruits abundantly, the berries are rather hidden by the drooping habit of the branches.

Berberis Hookeri var. *latifolia*.

Known in Nurseries as *B. Knightii*, it differs from the type in having larger leaves, green beneath and in attaining greater height. A handsome evergreen, its dark, glossy foliage appearing at its best during winter.

Berberis ilicifolia.

This rare species is much confused in Nurseries with the hybrid, *B. Neubertii*, and it is doubtful whether the true *B. ilicifolia* is in cultivation in England. The species is a very beautiful evergreen shrub with dark green holly-like leaves and orange-yellow flowers, much the same colour as *B. Darwinii*.

A native of Chile and probably not very hardy.

Berberis insignis.

An evergreen shrub reaching a height of 4ft. or 6ft. The stems are erect, light brown, and almost spineless,

the spaces normally occupied by spines being filled with leaves.

Leaves 3ins. to 7ins. long and 1in. to $1\frac{1}{2}$ ins. wide, solitary or in pairs, shortly stalked, shiny on both surfaces, bright green, and have spiny teeth along their edges. Flowers golden-yellow, borne in bunches of from three to twenty, each on a stalk $\frac{1}{2}$ in. to 1in. in length in May and succeeded by egg-shaped black berries.

A most striking plant, easily recognised by its large, stiff leaves and by the absence of spines on the stems.

This handsome Himalayan species forms a useful evergreen but is not one of the hardiest.

Berberis Jamesiana.

A delightful new deciduous species, with erect stems, at present 5ft. to 6ft. high, which when young are of a rosy-purple shade, and covered with bloom, later becoming brown.

Leaves $\frac{3}{4}$ in. to $1\frac{1}{2}$ ins. long, oval or roundish, with sharply pointed tips; on the stronger shoots the leaf margins are often entire, but on others they carry numerous sharp teeth.

Flowers small, opening in June in stalked bunches of ten to twelve, followed in August and September by round, coral-red fruit, which are almost transparent.

This rare species is likely to become popular when better known, on account of its very attractive colouring. At almost any season the foliage is more or less tinted with red or purple shades, which harmonise with its shining currant-like fruits.

Berberis japonica, syn. *Mahonia japonica*.

An evergreen shrub reaching a height of 8ft. or 10ft. The stems are stout and erect and rather sparsely branched.

Leaves 12ins. to 15ins. in length, compound, borne in clusters. The leaflets vary in number between nine and fifteen, each being from 3ins. to 5ins. long, leathery, glossy, dark green, with spiny margins.

Flowers pale yellow, carried on long sprays which arise in clusters of half-a-dozen or more from the centres of the rosettes of leaves. The sweetly-scented blossoms commence to open in late autumn and continue for two or three months. The blue-black fruits are not produced very freely and are often seedless.

This is an uncommon species, well worth growing for its handsome foliage, which is slightly tinted in the winter, but even more so for its flowers, whose delicious scent, resembling that of the Lily of the Valley is very noticeable on mild days. This species thrives best in partial shade in a good loamy soil where it will not feel the effects of drought—it should be allowed plenty of space to develop. It is one of the best winter flowering plants. It is a cultivated plant in Japan and was probably originally introduced to that country from Formosa or from the Philippine Islands, or possibly from China.

Berberis japonica var. *Bealei*.

A very handsome robust shrub, with even longer leaves and having more pairs of broader and more rounded leaflets than the type. The flowers are also



Berberis polyantha.

finer and have the same wonderful scent. They are held stiffly erect on short, dense spikes. Quite hardy, somewhat difficult to transplant and may be considered a rare shrub. It is apparently a native of China, whence it was introduced by Fortune in 1845.

Berberis Juliana.

An evergreen shrub reaching 6ft. in height. The young branches are smooth, yellowish-brown, and somewhat angular. Spines large, stiff, in threes, the centre one often an inch long.

Leaves 3ins. to 4ins. long, in clusters of five, pointed, tapering at the base to a short stalk. Margins sharply toothed, dark green on the upper surface, lighter beneath.

Flowers pale yellow, flushed with red, opening early in the season, produced in clusters of twelve to fifteen. The fruits are black, with a coating of bloom.

A robust growing *Berberis* resembling *B. Sargentiana*.

Berberis Lycium.

A deciduous shrub of vigorous growth, reaching a height of about 7ft. The stems are downy, but become smooth and brown when older. The spines are in clusters of three, $\frac{3}{4}$ in. long.

Leaves 1in. to $1\frac{1}{2}$ ins. long and $\frac{1}{3}$ in. as wide, the upper surface light green, the undersides greyish. The tip is sharply pointed, and the edges sometimes carry a few sharp teeth.

Flowers large in clusters of twenty or more, bright yellow, produced in May or June. These are followed

by an abundance of oblong, purplish-red berries in September.

In habit this species resembles *B. vulgaris*, but may be distinguished by the much less spiny leaf-margins and the different colour of the fruit. *B. Lycium* supplies the drug Lycium, which was formerly employed in India as a palliative in cases of inflammation of the eyes. The berries are edible.

Berberis Neubertii.

An evergreen shrub of comparatively little garden value but interesting botanically as being a hybrid between *B. Aquifolium* and *B. vulgaris*. The foliage is unlike either parent but many forms are intermediate between the two.

Leaves 1in. to 2ins. long with spiny edges, dark green, holly-like. It is doubtful whether it has ever flowered or produced fruit.

Berberis polyantha.

A strong growing deciduous shrub 6ft. to 8ft. high. The stems are erect with arching tips of a bright brownish-red, armed with spines 1in. long in clusters of three.

Leaves 1in. to 2ins. long, oval, tapering gradually to the base, arranged in flat tufts of six or more, bright green above, paler beneath.

Flowers pale yellow, small, produced in July in bunches, usually of about twenty, but on the strongest growths sometimes three or four times this number. The fruits are small and round, at first pinkish-white, but later becoming a rich vermilion.



Berberis pruinosa.

B. polyantha is a most ornamental plant, rendered very conspicuous by its numerous fruit clusters which resemble miniature bunches of grapes. It may be most effectively grown as a hedge, the long growths being trained fan-wise on horizontal wires. This method has been adopted in the gardens of the Royal Horticultural Society at Wisley and proved most successful. The masses of red fruit make a most brilliant show in autumn.

It comes from Szechnan in Western China.

Berberis Prattii.

Another deciduous Berberis, very closely resembling *B. polyantha* and *B. brevipaniculata*, although the leaves of *B. Prattii* are not so grey on the underside as in the case of the last named. So alike are they that for garden planting they may be considered synonymous. The same description practically applies to each of them and all are really good garden plants.

Berberis pruinosa.

An evergreen shrub of vigorous habit reaching a height of 6ft. to 10ft. The stems are stiff and erect, of a greyish-brown colour and furnished with stout spines $\frac{1}{2}$ in. to $\frac{3}{4}$ in. long.

Leaves 1in. to 3ins. long, $\frac{1}{2}$ in. to 1 $\frac{1}{4}$ ins. wide, thick and tough, light glossy green, their edges carrying numerous small, sharp spines. Many of the older leaves turn red in autumn.

Flowers lemon-yellow, carried in dense clusters of from ten to twenty, appearing in May. The fruits,

which ripen in October and hang on the twigs until February, are borne in profusion and are unusual in being covered with a thick bluish-white bloom, which makes them very conspicuous, and which suggested the name of the species. It was introduced from Yunnan at the end of the last century but although it is one of the most striking of the evergreen Barberries, it does not appear to be nearly so much planted as it deserves. It is worth a place in every garden.

Berberis replicata.

A rare and attractive evergreen shrub at present 4ft. high but it will, no doubt, eventually grow a good deal taller. The stems are slender, pale brownish-grey and armed with short-thin spines.

Leaves 1in. to 3ins. in length, narrow, sharply toothed, with recurved margins, deep green above, white beneath. The older leaves assume a deep crimson colour on the approach of autumn.

Flowers lemon-yellow, small, globular, produced in clusters over the entire length of the young shoots in February and March. Fruits black elliptical, on long reddish stalks.

A distinct species forming a compact bush which blossoms freely while still quite young and not more than 12ins. or 18ins. high; it is also one of the first spring *Berberis* to flower. A bunch of flowering sprays might, at first sight, be taken for *Acacia* or *Mimosa*.

A native of Western China, where it was first found by Forrest, and is described as growing in open scrub, at an altitude 11,000 feet. At Wisley it is seen growing



Berberis rubrostilla.

to perfection and is perhaps the most charming of the early flowering Berberis. It can readily be increased by seed.

Berberis rubrostilla.

A deciduous shrub at present about 4ft high, of graceful habit. The stems are erect, with arching tips, and copiously branched, at first purplish, becoming grey with age. The spines are in threes, slender and sharp, $\frac{1}{2}$ in. in length.

Leaves $\frac{1}{2}$ in. to $\frac{3}{4}$ in. long and one-half as wide, soft, bright green above, whitish beneath, the apex rounded and often armed with a sharp point, carried in dense clusters. The leaves are usually entire but sometimes have a few spiny teeth.

Flowers pale, in clusters from two to five in June, followed by long egg-shaped fruit $\frac{1}{2}$ in. in length. These are at first green, passing through white and many beautiful shades of pink, until they finally reach a rich scarlet.

This most desirable plant appeared among a batch of seedlings raised at Wisley and was the only specimen of its kind to be obtained. It is quite one of the finest of the deciduous kinds, most attractive when seen carrying a crop of its large fruits in various stages of colouration. Unfortunately this charming Berberis does not come true from seed and it should be propagated from cuttings.

Owing to the size and colour of the fruit, *B. rubrostilla* should form a most valuable plant for hybridizing. (See *illustration*).

Berberis sanguinea.

An erect growing, evergreen shrub, 6ft. or 8ft. high. The stems are light in colour and are armed with long, thin spines in clusters of three.

Leaves 2ins. to 3ins. long, $\frac{1}{4}$ in. to $\frac{1}{2}$ in. wide, dark green, with spiny margins.

Flowers bright yellow, in clusters, their stalks being red and rather long. The berries are black and the species was named with reference to its red flower stalks. It is a native of Western China.

Berberis Sargentiana.

A robust growing, evergreen shrub, reaching 8ft. in height. The stems are erect and stiff, at first light brown, passing to dark grey, armed with stout spines which are stiff and sharp. The spines are slightly grooved on the lower sides and often over 1in. long.

Leaves 1in. to 4ins. long, broadly lance-shaped, sharply pointed, tapering gradually to a narrow base. The upper surface dark, lustrous green, paler beneath, margins saw-like with very sharp teeth.

Flowers pale yellow, in clusters of twelve or more, open in April. The fruits are black, oval, and remain on the plant throughout the winter.

This is one of the hardiest of evergreen shrubs, conspicuous on account of its rigid, spiny growths. It is a native of China, where it was discovered by E. H. Wilson in Hupeh.

Berberis Stapfiana.

A semi-deciduous shrub 4ft. to 5ft. high, with long rigid stems which branch and spread, forming a grace-

ful plant. The yellowish-brown spines, in groups of three, are thin and very sharp.

Leaves $\frac{1}{2}$ in. to $1\frac{1}{4}$ ins. long and about $\frac{1}{8}$ in. wide, arranged in clusters of four to six, pale green above, whitish beneath, with sharp points and smooth unarmed edges.

Flowers pale yellow, borne in small clusters of four to eight, tightly packed in the centres of the leaf-clusters, followed by small, oval, crimson berries.

The attraction of this species is the gorgeous crimson foliage in late autumn. The leaves begin to turn in October and often remain on till Christmas. A native of North Western China.

Berberis stenophylla.

An evergreen shrub forming a dense, shapely bush, roft. high. The stems are slender, spreading and arching in all directions and set with many small spines.

Leaves $\frac{1}{2}$ in. to 1in. long, narrow, oblong, with sharply pointed tips and recurved margins, dark green above, pale beneath.

Flowers bright yellow, produced in April and May in small clusters over the whole length of the young shoots. The round blue-black berries ripen in August but, like those of *B. Darwinii*, soon fall.

This fine plant is a hybrid which arose from a cross between *B. Darwinii* and *B. empetrifolia*. It appeared in a nursery near Sheffield some sixty years ago. It does not closely resemble either parent, the leaves are much the same shade as *B. Darwinii* but the flowers are slightly paler, and it is far taller and more graceful in growth.

B. stenophylla is, when in flower, one of the most beautiful shrubs, a well-grown specimen becoming a dazzling mass of golden rain in the spring. It is an excellent plant for sloping banks where there is room for it to develop fully, and it may also be used as a hedge plant. Seedlings of this hybrid do not come true but produce a variety of forms, many with a tendency to revert to the spreading habit of *B. empetrifolia*. It should therefore be propagated by cuttings of half ripe wood which root freely under a hand-light in early autumn. There are a number of seedling varieties, some of them being dwarf shrubs of neat habit.

Berberis stenophylla var. "Brilliant."

A fine dwarf or drooping form with flowers of richer colour than the type. It is best planted up on a rockery where it becomes a cascade of bronzy-gold each spring.

Berberis stenophylla var. *gracilis*.

A low growing variety, smaller and more compact than the type.

Leaves $\frac{1}{2}$ in. to $\frac{3}{4}$ in. long, narrow, entire.

Flowers bright golden-yellow.

There are numerous garden forms of this variety.

Berberis stenophylla var. *Irwinii*.

A handsome, low shrub resembling *Darwinii* but the racemes of blossoms are lighter in colour. Quite one of the best of the group.

Berberis Thunbergii.

A deciduous species forming a compact, rounded bush, 4ft. to 5ft. in height. The short, stiff, reddish-brown branches are grooved, spreading horizontally and drooping at their tips. The spines are about $\frac{1}{2}$ in. long, borne singly.

Leaves about $\frac{3}{4}$ in. long, very numerous, oval, broadest near the apex with smooth edges and spiny tip ; of a fresh, pale green when young.

Flowers pale yellow, flushed with red, of a medium size, borne singly among the clustered foliage. The fruits are pendant on long stalks, oblong, bright red, but usually hidden until the leaves fall.

Although its berries are not conspicuous, the plant is handsome in early autumn, when the soft green foliage gives place to shades of yellow and crimson.

Berberis Thunbergii var. *minor*, which seldom exceeds 2ft. in height is a useful small shrub for the Rock Garden.

Berberis verruculosa.

A vigorous rounded evergreen bush, 4ft. high, of dense growth. The branches are stiff and arching and very thickly set with foliage. The surface of the stem is rough and brownish. The pale coloured spines occur in clusters of three or five.

Leaves $\frac{1}{2}$ in. to 1in. long, $\frac{1}{3}$ in. to $\frac{1}{2}$ in. wide, thick, leathery, with sharply toothed margins. Dark glossy green on the upper surface, grey, downy, beneath.

Flowers bright yellow, large, generally solitary, opening in May. Handsome black fruit covered with rich purple bloom.

One of the most beautiful *Berberis*, a true evergreen though, during the winter, it generally happens that a few leaves turn to a bright crimson. It is not quite so free-flowering as some species, yet its compact growth and bright foliage make it an eminently desirable shrub. A native of China, first found by Wilson.

Berberis virescens.

A deciduous shrub 8ft. to 10ft. high. The stems are erect, conspicuous by the shining red bark in winter. The spines are long and thin, in clusters of three.

Leaves 1in. to 1½ins. long, uniform in size, and one-half as wide, light green, with spiny margins.

Flowers pale yellow, produced in short bunches and followed by thin reddish berries.

It was discovered in Sikkim by Hooker and there is apparently a variety with black fruits, sometimes known as *B. virescens* var. *macrocarpa*.

Berberis vulgaris.

A robust, deciduous shrub often 8ft. or 10ft. in height. The stems are grey and grooved, usually much branched in the upper parts, spines in threes.

Leaves 1½ins. to 2½ins. long with spiny edges.

Flowers bright yellow in pendant clusters 3ins. in length, produced in great profusion during June, followed by bunches of long, scarlet fruits in October.

The common Barberry is found wild in England and many parts of Europe and temperate Asia. It is a

vigorous, hardy plant, useful for planting in exposed places ; in fact, it will grow almost anywhere, even when planted in rough grass. It is therefore most useful where a screen is wanted.

A large bush in full fruit makes a most brilliant wealth of colour in the autumn with its pendant clusters of brightly coloured fruits.

Berberis vulgaris var. *purpurea*.

A most striking foliage shrub, the leaves being of a rich purplish copper, but otherwise similar to those of the type. To obtain the full beauty the older stems should be annually cut out, thus encouraging the strong, young growths which are always the most richly coloured. When planted close to or under Laburnums, or near a mass of *Spartium junceum* it forms a most attractive combination of yellow and bronze. Propagation should be by cuttings as seed cannot always be relied upon to come true. There are many other named and variegated varieties of *B. vulgaris* but none are equal to the variety *purpurea* as garden plants.

Berberis Wallichiana.

An erect evergreen species, closely allied, if not synonymous with *B. Hookeri*. The shiny grooved stems eventually reach a height of 10ft.

Leaves 2ins. to 3ins. long, narrow, dark lustrous green above, paler beneath ; margined with small, sharp teeth.

Flowers pale lemon-yellow, borne on short stalks in

drooping clusters and followed by egg-shaped black fruits.

A useful, free-flowering shrub, a native of China and Himalaya.

Berberis Wilsonae.

A low-growing deciduous shrub of graceful spreading habit, seldom more than 3ft. in height. The branches are slender, angular, slightly downy and of a brownish colour, armed with slender spines about $\frac{1}{2}$ in. long.

Leaves $\frac{1}{2}$ in. to 1in. long and half as wide, some sharply pointed and others with rounded tips, mostly without spined edges. The upper surfaces are pale green, the undersides whitish.

Flowers pale yellow, borne in clusters of five or six during May and succeeded by abundant, round, coral-red fruits which ripen in September.

A charming autumn species, with its numerous bright red berries and reddish leaves which remain on the plant till early winter. It is of great value for covering a bank and on the rough part of a rockery. When grouped in front of other shrubs it forms a useful garden plant.

A native of Western China, it was first seen in 1904.

Berberis yunnanensis.

A strong-growing, deciduous shrub very closely allied to *B. diaphana*. The most noticeable differences are in the greater number of flowers which this species bears in each cluster (sometimes eight together) and in the much less spiny leaves which surround them.

A native of China, it assumes beautiful shades of colour in the autumn, when its leaves turn crimson.

Berberis hybrids.

In addition to the many species of *Berberis* there are a great number of hybrids, some of natural or accidental origin, while others have arisen as the result of careful crossing. The beautiful *B. rubrostilla* is of hybrid origin and seedlings from it vary considerably both in the size and colour of the fruit. It is very curious to see the great variation in forms from one bed of seedlings. Many beautiful varieties have been most successfully raised at Wisley where they make luxuriant growth. There are now such a number that it is impossible to describe a tenth part of them.

The following are some of the more distinct varieties recently raised :—

Autumn Beauty. This bears berries $\frac{3}{8}$ in. long, rather flattened at both ends and brightly coloured. This and the hybrid Sparkler show strong signs in fruit and foliage of their relationship with *B. rubrostilla*.

Autumn Cheer. A polyantha hybrid bearing dense clusters of roundish scarlet berries on pendant branches.

Carminea. The berries are of rather deeper and bluer shade than those of Sparkler, the habit more erect.

Sparkler. A seedling of pendulous habit, bearing numerous berries of a bright coral colour.

Tom Thumb. A quaint little hybrid deciduous shrub 9 ins. to 12 ins. in height, forming a small prickly cushion, covered in autumn with small red berries.

Quite the dwarfest of the Berberis, it is a good rock plant. It is of very slow growth and a specimen some six years old may be less than 10 ins. high. It is probably a cross between *B. Wilsonae* and *B. aggregata*.

III.

BUDDLEIAS.

A GROUP of strong growing shrubs of which many species have been found in China during recent years. They cannot all be considered hardy, but nearly all the *variabilis* group will withstand any ordinary winter and form handsome shrubs, with a wealth of long, purple flowers during July and August. Buddleias are excellent garden plants for open, sunny positions, as they do not like to be planted in the shadow of large trees or in a place where they are sheltered from the air and sun. In addition to this they are most valuable seaside shrubs, where their tough leaves and cane-like branches bend over before a harsh sea wind, coming up again none the worse. Buddleias are not particular as to soil, but warm, light land with some well decayed manure suits them best, in this they grow very fast, often making six or eight feet in a season. The varieties flowering on the young wood, such as the *variabilis* section, should be pruned hard back each spring, if this is omitted they are liable to become straggly and the flower spikes small. Most Buddleias can be easily increased from cuttings, they should be cut off about four inches long, just under a joint, and dibbled into a five-inch pot. Cuttings always strike best round the edge of the pot, sandy

soil being used. The pots should then be placed in a propagating pit or under a bell-glass in a greenhouse with a little warmth if possible. Late summer is the best time to take cuttings. The following is a selection of the most useful Buddleias, also those which thrive best on the coast :—

Buddleia alternifolia.

This attractive shrub was introduced by the late Mr. Reginald Farrer, who first found it on his Kan-Su journey in 1914, and described in the *R. H. S. Journal*.

“ It prefers a steep dry bank, and an open warm place, where it grows like a fine leaved and very graceful weeping willow, either as a bush or small trunked tree, until its pendulous sprays erupt all along into tight bundles of purple blossom at the end of May, when the whole shrub turns into cascades of colour.”

Seen at Wisley last summer it fully bore out this description and should be widely planted. As the flowers are produced on the last season's wood it must not be cut back like most Buddleias and any pruning which may be necessary should be done immediately after flowering. It has so far proved quite hardy in English gardens and can be readily increased from cuttings in early autumn.

Buddleia Colvilei.

A handsome vigorous growing species, but distinctly tender and will not withstand a winter except on the warmest wall or in the south-west near the sea.



Buddleia alternifolia.

Leaves 6ins. to 9ins. long, narrow, pointed, with evenly toothed edges of a dark, rich green.

Flowers deep red in drooping clusters.

A native of the Himalayas and one of the finest Buddleias, but owing to the soft fleshy growth it is very susceptible to frost.

Buddleia Fallowiana.

A distinct Chinese shrub of vigorous growth, but it is doubtful if it will withstand a severe winter.

Leaves 5ins. to 7ins. long, pointed, grey-green on the upper side, and the flat stalks are covered with thick white felt.

Flowers, white in long spikes each little blossom with an orange eye, sweetly scented. Flowering freely through July and August, it will become a good shrub and companion plant to the more showy purple varieties.

There is also a form with lavender flowers.

Buddleia Forrestii.

An attractive low growing shrub from China.

Leaves 5ins. long, silvery-grey in the young state, the under side being quite white. The stems are also white with a thick felt like down, so thick is this down that it comes off when fingered.

Flowers produced in terminal and lateral spikes of a pale lavender shade, each tiny flower having an orange centre, very sweetly scented.

In Cornwall and in sheltered places on the coast it makes a fine shrub eight feet high. In the colder

districts it gets badly damaged by frost and cut to the ground, but shoots up again the next spring apparently little the worse. It should, however, be given the warmest and most sheltered position.

Buddleia globosa.

A very robust somewhat loose growing shrub, a native of Chile and Peru, forming a large bush up to twenty feet. It may be considered an evergreen, only losing its leaves in very severe winters inland.

Leaves 4ins. to 7ins. long, tapering to a fine point, irregularly notched edges, the upper surface is corrugated and of a rich dark green, grey beneath, almost downy, with very prominent veining.

Flowers bright orange, in globular balls, borne on short stalks, springing from the axils of the leaves in June and sweetly scented.

This distinct *Buddleia* is a most valuable seaside evergreen of very rapid growth, often sending out shoots four to six feet in length in a season, but it must not be considered only a seaside plant, in the warmer counties it is quite safe inland. It should be given a warm corner and is best in light, well drained soil.

It does not require pruning unless it becomes straggly, when it may be cut back in the spring. Like most of this family, it may be increased by cuttings.

Buddleia variabilis.

A strong growing deciduous Chinese shrub, keeping its leaves well into the winter. The growth varies, but is generally low and spreading.



Buddleia variabilis magnifica.

Leaves 5ins. to 7ins. long, pointed, grey on the under side.

Flowers produced in long spikes of thickly packed, lilac coloured small blossoms in July.

Buddleia variabilis var. *magnifica*.

A strong erect growing shrub, 10ft. to 12ft. in height and requiring to be cut back each year.

Long spikes of purple flowers, the throat of each blossom being orange. Fragrant with honey-like scent. Quite the best of the varieties, equally good for coast or inland garden and one of the most effective shrubs flowering in July and August. Roots easily from cuttings.

Buddleia variabilis var. *Nanhoensis*.

A distinct and small growing form of *B. variabilis* found in China by the late Mr. Reginald Farrer.

Leaves somewhat smaller than the type with gracefully arching branches.

Flowers vary much as to colour, the darker forms selected at Wisley being the best. So far the plant has not reached more than 3ft. to 4ft. in height. It will make a useful plant for small gardens, where *B. magnifica* becomes over-powering. Flowering in July it requires much the same treatment as the tall growing kinds.

Buddleia variabilis var. *Pink Pearl*.

A distinct variety with upright habit and handsome spikes of pale lavender-mauve, each tiny flower having a straw-coloured tube.

Buddleia variabilis var. *rosea*.

Handsome spikes of rosy-purple, good upright habit.

Buddleia variabilis var. *Veitchiana*.

A more upright growing shrub and slightly deeper in colour than the type.

IV.

CEANOTHUS.

A VALUABLE genus of shrubs which may be had in bloom over a long period of time, for the various species will flower one after another from April to mid-September.

The various species of *Ceanothus* may be divided into two distinct sections, those that flower on the wood of the previous season, such as *C. papillosus*, *C. dentatus*, etc., and the *Gloire de Versailles* type, which flower on the young wood of the current year. The colour of the flowers vary from blue to cream and almost pink, but those with blue flowers are the most valuable, both for their colour and for the freedom with which they flower.

All are natives of the Pacific Coast of North America, some being hardy enough to stand in the open through severe winters, while others, except in the south-west, are more at home if given a wall where they grow with extreme rapidity, their small shoots and leaves quickly covering the space allotted to them. The more rampant growing varieties must not be confined too closely, but allowed to grow out a foot or two from the wall. *C. papillosus* grown in this way forms a beautiful mass of colour about the third week in May, when it is so crowded with blue panicles that hardly a leaf is visible.

CULTIVATION.

Ceanothus are plants that revel in sun and should always be allotted the warmest position possible, whether in the open or against a wall.

A light soil suits them best, and they will not succeed in ground which is inclined to be wet or stagnant. Planted in warm soil they soon start into growth, often making two or three feet the first season. On the other hand, they are not easy to transplant, and should be planted from pots into their permanent positions. Always avoid planting in winter when the ground is cold, early autumn or late spring being the most satisfactory times to plant. Care should be taken that the roots are moist when turned out, and if the plants are dry when they are received, soak them in a pail of water before placing them in the ground.

PRUNING.

The spring flowering varieties require very little pruning, and what is necessary should be done directly after flowering, and then only shorten the young growths; if cut hard back into the old wood they often refuse to break kindly. The Gloire de Versailles type should have their young growths cut back in the early autumn—or in the spring, bearing in mind that the winter is the worst possible time to prune this class of shrub. The young season's growth may be safely shortened back to within an eye or two of the old wood. This pruning is particularly necessary when grown on a wall, otherwise they are apt to project too far. When treated as shrubs in the open they merely need trimming in, so as to keep them in shape.

PROPAGATION.

Ceanothus are not easy plants to propagate, but with a little care they can be struck from cuttings. These root best at the end of the summer—August and September. Small cuttings should be taken off at a joint and inserted round the edge of a pot in pure, sharp sand. Fill the pot one-third with crocks and then with the sand. Do not press the sand firm, but saturate it with water. Keep the pots close under a bell-glass, or in a frame with a little bottom heat, but this is not really necessary.

When they are rooted, pot them off singly and keep them in a cold frame. When a foot high they should be planted in their permanent homes. Large plants that have rooted over the pots, seldom start into growth so well as those of a small or medium size.

NOMENCLATURE.

The names of the various species and varieties of Ceanothus are often confused and the same variety is found under several names. In some cases the only safe way of distinguishing them is by the veining on the under side of the leaf. *C. Veitchianus*, for instance, has three prominent veins springing from the base of the leaf, while in *C. dentatus* the two veins from the base are not nearly so clearly marked.

Ceanothus americanus.

A low growing shrub, deciduous and quite hardy, but not of much value as a garden plant.

Leaves large, alternate, $2\frac{1}{2}$ ins. long with a distinct

saw-like edge. The stems of the young wood are dark red where exposed to the sun and rough to the touch.

Flowers dull pinkish-white, borne in small clusters on the young wood. Sometimes known as "New Jersey Tea," for the leaves are said to have been used for tea at one time in the United States.

Ceanothus azureus.

A fast growing, deciduous species from Mexico, flowering on the young wood from July onwards. It has been eclipsed by Gloire de Versailles, of which it is one of the parents, and therefore no longer has much value as a garden plant.

Leaves large, 2½ ins. to 3 ins. long.

Flowers pale blue in small heads on short, red-brown stalks. It is fairly hardy and makes a good shrub in the open, but is safer on a wall.

Ceanothus dentatus.

A good evergreen species either in the open or against a wall.

Leaves small, not more than an inch in length, of a glistening dark green, with curiously notched edges, paler on the under side, with the veining arranged like a herring bone.

Flowers pale grey-blue in small bottle-brush-like clusters, on the wood of the previous year, produced in great profusion at the end of May and early in June, slightly later than *C. papillosus*. In the southern and eastern counties in light soil, *C. dentatus* flourishes in the open and withstands all but the most severe winter. Further north it is best planted against a wall.



Ceanothus Papillosus.

Ceanothus divaricatus.

A very scarce species closely resembling *C. thyrsiflorus*, but with paler flowers, and not so valuable as a garden plant.

Ceanothus Fendleri.

A small, compact, woody shrub, 3ft. to 4ft. in height.

Leaves very small, of a greyish green, flowers mauvish-white.

This species can hardly be called showy and, though quite hardy, is of comparatively little value as a garden plant.

Ceanothus papillosus.

A good wall shrub, and a very distinct species, flowering on the wood of the previous season about the middle of May.

Leaves alternate, narrow, about 2ins. long, with conspicuous warty excrescences on the upper side, the under surface being downy with a prominent mid-rib.

Flowers bright azure-blue, in five or six little terminal heads at the end of each branch. This species flowers so profusely that it is one whole mass of pale blue and there are but few shrubs to equal it when at its best. It is a true evergreen and, although fairly hardy, should be given a position at the foot of a south wall where it can have a certain amount of room and be allowed to grow freely. It requires light pruning immediately after flowering.

Ceanothus rigidus.

A stiff upright-growing evergreen shrub, almost prickly to the touch.

Leaves small, opposite, often only $\frac{1}{4}$ in. long, of a bright shining green thickly crowded on hard woody stalks.

Flowers violet-blue in small dense heads. One of the first species of *Ceanothus* to bloom, early in May or even in April. To be a success it needs a wall and then it will stand a hard winter unharmed. There are one or two varieties of *C. rigidus* which differ slightly in colour.

Ceanothus thyrsiflorus.

The tallest and most robust growing species of this family. In the open it forms a dense shrub 10ft. to 20ft. in height, and is quite hardy even through a severe winter. The fine specimens growing at Kew are ample proof of its hardiness. In winter it is valuable for its small, neat, evergreen foliage, while towards the end of May each shrub becomes one mass of small azure clusters. There are few flowering shrubs to equal it, though in its early years it does not flower as freely as some of the other species.

Leaves alternate, of medium size, 1in. to $1\frac{1}{2}$ ins. long, and half this in width, of a dark glistening green, very distinctly three nerved.

Flowers pale azure-blue, in short rounded heads, produced from the growths of the previous year.

Ceanothus thyrsiflorus var. *griseus*.

A strong growing evergreen, nearly allied to *C. thyrsiflorus*. The leaves however are much larger, and it is not nearly so hardy, but requires the shelter of a warm wall.

The flowers are greyish-white, and although it is a very distinct species, it is not so useful a garden plant as *C. thyrsiflorus*.

Ceanothus Veitchianus.

An excellent wall shrub of very fast growth, often covering a yard or more in one season, flowering just after *C. papillosus*.

Leaves broad, $\frac{3}{4}$ in. to 1 in. in length, of a bright, shining dark green.

Flowers greyish-blue, in dense terminal masses, each raceme being $2\frac{1}{2}$ ins. to 3 ins. long.

Few climbing plants can equal *C. Veitchianus* for covering a west or south wall. It requires pruning immediately after flowering so that it has time to make fresh growth, which will form flowering shoots for the next season.

Ceanothus Gloire de Versailles.

This is probably the most valuable of all the hybrid *Ceanothus*. Planted against a wall, it quickly covers a large space and in the warmer counties it may be grown as a bush in the open.

The leaves are much larger than those of *C. azureus*, one of its parents, being 3 ins. to $3\frac{1}{2}$ ins. long and half this in width, of a rich glossy green, paler on the reverse side and with prominent veins.

Flowers deep azure-blue, individually very minute, but produced in such masses as to form large axillary panicles or clusters. The inflorescence is often 8 ins. in length. It begins to blossom in early July on the young wood of the current season and continues to

give a wealth of brilliant blue heads until well into October. It is advisable to shorten back the young growths and this pruning should be done in the early spring. It will then form the young growths on which it flowers in the summer. At present none of the many hybrids equal Gloire de Versailles, but the following are the most useful.

Ceanothus Albert Pittet.

Pinkish-mauve, with deep pink stalks to the flowers. An effective shrub in a sheltered situation.

Ceanothus Ceres.

A strong-growing hybrid, having large leaves with very conspicuously toothed edges.

Flowers pinkish-mauve on strong stalks.

Ceanothus alba flore pleno.

The nearest approach to a white Ceanothus. Round clusters of pinkish buds which open a blush-white. An attractive plant.

Ceanothus Indigo.

A beautiful variety with clusters of dark blue flowers, the darkest shade of blue in the Ceanothus. Unfortunately it is not hardy and will not do except on a warm wall.

Ceanothus Leon Simon.

Grey-blue, large masses of flowers.

V.

CISTUS AND HELIANTHEMUM.

ROCK-ROSE AND SUN-ROSE.

THESE two botanical genera form a charming family of low-growing flowering shrubs, so closely allied with one another that they are placed under the same heading. They are much confused in many lists, and the same plant is found under both *cistus* and *helianthemums*. In fact, there is, botanically, only a very small difference between them, which is to be found in the formation of the seed vessel and in the number of the seeds. Most of the true *cistuses* grow to a larger size than the *helianthemums*, and have flowers of various shades from pure white to deep purplish-red, whilst the *helianthemums* include beautiful yellow varieties, which are never found among the *cistuses*. In a wild state both are found growing in profusion in Spain, Portugal, and Southern France, and also along the shores of the Mediterranean, where they revel in the fullest sunshine. Unfortunately many are not quite hardy enough to stand an English winter, particularly inland, and on cold soil. On the coast and in southern and western countries they are perfectly easy to grow, producing masses of many coloured flowers, which fall every afternoon, only to be re-

plenished with another wealth of bloom with the next morning's sunshine.

Cistuses are evergreen, and some varieties have a pleasant pungent smell when the foliage is lightly touched, more especially in the early spring, and a sticky gumminess which gives them the name of Gum Cistus. They are evidently plants that were much prized in our gardens a hundred years ago. Sweet's "Cistineae," published in 1825-30, with many beautiful, accurately coloured plates, still holds its place as being the best book on Cistuses and Sun Roses although many varieties mentioned by Sweet are now lost to cultivation. The popular name of Rock-rose generally applies to Cistus while the dwarf Helianthemum is known by the old English name of Sun-rose.

When planted in large groups on a dry, sunny bank or border, particularly if the soil is light, few plants succeed better, or give more flower with so little attention, than the Cistus. Some of the smaller helianthemums are more suited for a warm corner of a rockery and for positions which are too dry for most plants to be able to thrive.

CULTIVATION.

Cistuses do not transplant well when once established and it is therefore always advisable to start with small plants which grow away freely. In most Nurseries they are grown in pots and the pots plunged in the open ground and, if these small plants are kept watered, they generally respond by quickly establishing themselves. When they are planted in the orthodox way in November and December, and a cold, wet

January follows, even if the plants are not actually killed, they do not thrive so vigorously as those planted in the spring. Warm, well-drained soil, and full sunshine are demanded by all *Cistus* and *Helianthemums* if they are to flourish, while the smaller species are quite at home in the crevices of a dry wall or on the higher parts of a rockery. The stronger growing *Cistus*, such as *C. cyprius*, *C. laurifolius*, and *C. villosus* are better for a slight pruning immediately after flowering, but care must be taken not to cut back into the old wood, unless there are some indications of shoots below the point to which it is proposed to cut it back. With the smaller growing kinds pruning is unnecessary. The *Cistus* is, as a rule, not a long lived shrub, and it is always well to keep a supply of young plants in reserve. Old plants often become shabby and straggly after some ten or twelve years.

PROPAGATION.

Seeds are produced by some kinds, particularly by *C. laurifolius*, which indeed seeds so freely that the surrounding ground is frequently covered with young, self-sown seedlings. The usual method of propagating is by cuttings which strike readily when they consist of half-ripened wood taken towards the end of the summer. They can be rooted under a hand-light or in gentle heat and it is also quite possible to get the cuttings to strike freely out of doors in a sheltered place. Small cuttings, two to three inches long, cleanly cut immediately beneath a joint are the best and most easily rooted.

The hardiness of these shrubs is curiously variable.

It seems to depend, to a large extent, on the age of the plant. An old bush is often much damaged by a severe winter, while young plants withstand it unharmed.

LIST OF THE HARDIEST CISTUS
AND HELIANTHEMUMS.

Strong-growing varieties.

Cistus corbariensis.

„ crispus.

„ cyprius.

„ hybridus.

„ laurifolius.

„ platysepalus.

„ populifolius.

„ purpureus.

„ Silver Pink.

„ villosus.

Low-growing varieties one to two feet high.

Cistus Clusii.

„ florentinus.

Helianthemum algarvense.

„ formosum.

„ formosum var. unicolor.

„ lunulatum.

Cistus albidus.

A strong, bushy shrub, easily distinguished by its thick flannel-like leaves, $2\frac{1}{2}$ ins. in length, without stalks, of a pale silver-grey. The young foliage has a distinct white edge.

Flowers pale rosy-mauve, with a yellow stain at the base of each petal.

Like *C. villosus* it is very easily grown from seed and thus there are many types with slight variations. An attractive garden plant, both for the bright flowers in July and for the grey foliage in winter. It is fairly hardy, it requires no pruning and cuttings root easily.

Recently a very beautiful form with white flowers has been collected in the south of France by Sir Oscar E. Warburg and was shown at the R.H.S. for the first time in June, 1924. The pure white flowers harmonizing with the grey foliage, while the growth and habit is identical with the pink form.

Cistus candidissimus.

A strong, quick-growing plant from the Canary Isles. Leaves long, of rather a pale green.

Flowers large, $2\frac{1}{2}$ ins. to 3 ins. across, of a mauve-pink, petals slightly twisted at the edges and forming a loosely made flower.

This would be a fine species if it were hardy but owing to its tenderness it is useless as a garden plant, except in the south-west.

Cistus Clusii.

A spreading low-growing plant, seldom more than 12 ins. in height.

Leaves small and tough, of a shining dark green.

Flowers white and cup-shaped, with a small yellow centre.

Very free flowering, and one of the earliest *Cistus*, often in full bloom by the middle of May, hardy.

A good rock plant and ground coverer, in any warm sandy soil.

Cistus corbariensis.

A hybrid between *C. populifolius* and *C. salvifolius*, forming a thick low-spreading bush, upwards of 4ft. in height and more in diameter.

Leaves 1in. to 2ins. long, bluntly pointed, square at the base, the upper surface is wrinkled and harsh to the touch, curiously curled edges, with tiny teeth, of a dark green.

Flowers white, slightly cup-shaped, with small yellow eye, very freely produced towards the end of June.

A native of Southern Europe, this delightful little evergreen is one of the hardiest of all the *Cistus*. Its compact habit makes it invaluable for clothing a hot, dry bank or for planting in the front of a shrub border. It requires little or no pruning and does not become straggly. In early summer it is a cloud of blossom, while during winter it is not unattractive with its dark green foliage and red wood. Small cuttings root freely in a frame or hand-light in early autumn.

Cistus crispus.

A sturdy, close-growing, little shrub, 3ft. to 4ft. in height.

Leaves rough, broad and bluntly pointed, $1\frac{1}{2}$ ins. to 2ins. long, with red shading at the base of the young lateral shoots.

Flowers bright rose-red, with a suspicion of mauve, the petals being prettily crimped and about 2ins. in diameter.

Blossoming in great profusion in July and continues at intervals till October. A variety easily recognised by its small, bract-like leaves, which grow close up to the base of the flowers. A delightful little shrub, one of the best and hardiest of the coloured Cistuses.

Cistus cyprius.

A strong-growing, evergreen shrub, sometimes reaching 6ft. to 8ft. in height.

Leaves long and narrow, of a sage-green, with a fresh pungent smell, particularly in the spring.

The flowers, which are 3ins. in diameter, are white with a rich crimson blotch at the base of each petal and are freely produced in clusters in June and July.

One of the hardiest Cistus, which will stand unharmed any ordinary English winter. Even at Kew this variety came safely through the severe winter of 1917. *C. cyprius* is often confused in Nurseries with *C. ladaniferus*, from which it is quite distinct, the flowers being slightly smaller and produced in clusters, while in *C. ladaniferus* the flowers are always solitary. It is probably a hybrid between *C. ladaniferis* and *C. laurifolius*, and seldom, if ever, produces seed.

Cistus florentinus.

A compact growing shrub, rarely more than 3ft. high.

Leaves long, narrow, pointed, 2ins. to 2½ins., dull green.

Flowers white, slightly cup-shaped, very freely produced in early July. The flowers closely resemble

those of *C. corbariensis*, but it is distinguished by the long, narrow leaves.

A good plant for the higher or rougher parts of a rockery. Not quite so hardy as some, but comes safely through an ordinary winter.

Cistus hirsutus.

A low branching shrub, very like *C. platysepalus*, but without the bronzy leaves, so characteristic of that variety.

Leaves long, narrow, $2\frac{1}{2}$ ins. in length, pale green, stalkless. The stems are covered with stiff white hairs.

Flowers in clusters, white, flat, with a heart-shaped calyx.

A hardy plant, but not equal to *C. platysepalus*.

Cistus hybridus.

Under this rather vague name is known a free-growing, bushy *Cistus*, much like *C. corbariensis* in the shape and size of the flowers.

Leaves dull green, pointed, about 2 ins. to $2\frac{1}{2}$ ins. long.

Flowers white, raised on stalks well above the foliage, and with very distinct rose-coloured buds.

A hardy, easily grown plant, which will thrive in any warm, poor soil.

Cistus ladaniferus.

The most handsome of all the *Cistus*, but unfortunately not one of the hardiest after the first few years, though when quite young, it withstands severe frost.

Leaves long, narrow, pointed, deep green in colour, not blue-green like those of *C. cryprius*. The young growths are glossy green and very sticky.

Flowers 3ins. to 4ins. across, white, with a rich crimson blotch, the petals curiously crimped.

A good garden shrub for a warm situation. It requires slight pruning just after flowering and is propagated by seed or cuttings.

Cistus ladaniferus var. *immaculatus*.

A beautiful flowering shrub with large pure-white flowers closely resembling the type in growth and habit. This old but valuable variety figured by Sweet under the name of *C. ladaniferus* var. *albiflorus*. It was brought into prominence by Sir. Wm. Lawrence who exhibited it at the R.H.S. in June, 1925, and gained an Award of Merit.

Unlike many *Cistus*es the blossoms when cut remain fresh in water for some days and are most attractive when used in this way.

Cistus laurifolius.

A robust evergreen, forming a dense shrub, often 7ft. in height.

Leaves broad and often slightly curled, of a dark green.

Flowers white, 2ins. to 2½ins. across. Petals tinged with yellow towards the base.

One of the hardiest and best shrubs for an exposed position on the coast or inland. It seems to thrive equally well in any well-drained soil and can be easily raised from seed or cuttings.

Cistus Loretii.

A low evergreen plant of dwarf habit.

Leaves long, narrow, of a deep green.

Flowers white, with a fine crimson blotch at the base of the petals, closely resembling those of *C. cyprius* but smaller.

A really good plant in places where it thrives, but it appears to require a much better soil than most *Cistus*.

Cistus monspeliensis.

A branching, evergreen shrub, 4ft. to 5ft. in height and as much in diameter.

Leaves deep green, long and narrow, $2\frac{1}{4}$ ins. long and only $\frac{1}{4}$ in. to $\frac{1}{2}$ in. in width, with three nerves or ribs, and often curiously twisted, which makes the plant easy to distinguish from other *Cistus*.

Flowers white, very freely produced on short stalks, singly and in clusters during July.

Hardy only in sheltered places. Roots readily from cuttings.

Cistus platysepalus.

A small, branching shrub, rarely more than 3ft. high. Leaves long and narrow, 2ins. to $2\frac{1}{2}$ ins., with a very prominent mid-rib.

Flowers white with a yellow centre, the half-open buds of a distinctly pink shade.

A native of Crete, closely related to *C. hirsutus* and fairly hardy. The whole plant assumes a bronzy shade during autumn and winter, a change which adds to its value as a garden plant.

Cistus populifolius.

A strong-growing, spreading shrub.

Leaves broad and slightly twisted, dark green and distinctly resembling those of a poplar, the centre vein being often red.

Flowers white, 2ins. to $2\frac{1}{2}$ ins. in diameter, with a yellow stain at the base of the petals, the buds being of an attractive red shade.

A good garden plant and fairly hardy.

Cistus purpureus.

The largest flowered of the coloured *Cistus*, forming a compact bush, often 4ft. high and as much in diameter.

Leaves long, rounded at the end, of a dull, deep green, paler on the under side.

Flowers light purple, with a conspicuous deep purple blotch at the base of each petal, resembling those of *C. cyprius* except in colour.

Unfortunately it is not one of the most hardy, and, though it comes safely through most winters as a young plant, it becomes more tender with age. When planted on a warm, sunny border, it forms a striking plant during July with its large handsome flowers, and is easily increased by cuttings.

Cistus salvifolius.

A low, compact, much-branched shrub from Southern Europe, and particularly the Mediterranean Coast.

Leaves small, rounded, on short stalks.

Flowers white, tinged with yellow at the base of the petals, usually produced singly on short stalks.

Not one of the hardiest, nor as good a plant as several other white-flowered *Cistus*es.

Cistus Silver Pink.

A most attractive pink *Cistus* raised in Messrs. Hillier's nursery, and probably a seedling from *C. villosus*. Forms a compact shrub.

Leaves 2ins. to $2\frac{1}{2}$ ins. long, and 1in. in width, three nerved, of a sage green, downy on the under side.

Flowers clear pink without a trace of mauve, quite a distinct shade from those of any other *Cistus*. The blossoms are slightly cup-shaped, on short, upright stalks and remain open well into the afternoon.

One of the hardiest varieties which will become a very popular garden plant.

Cistus villosus.

One of the strongest-growing *Cistus*es with coloured flowers, but apt to become straggly with age.

Leaves greyish-green, pointed, 2ins. to $2\frac{1}{2}$ ins. in length, tapering towards the stalk, stems very downy.

Flowers rose-purple, with crimped petals.

This *Cistus* comes so readily from seed that there are many varieties, differing slightly both in colour and growth. Very free-flowering and should be slightly pruned after flowering. Cuttings root readily.

HELIANTHEMUMS.

Helianthemum algarvense, syn. *ocymoides*.

A most charming yellow-flowered *Helianthemum*, from Southern Europe, forming a low shrub of upright growth, seldom more than 2ft. in height.



Helianthemum algarvense.

Leaves small, narrow, pointed at each end, of a greyish-green, while the young growth is quite silvery.

Flowers bright canary-yellow, with a deep chocolate blotch at the base of each petal, borne in loose panicles on thin, wiry stalks. The pointed buds are bronze-coloured which adds greatly to the charm of the plant.

Planted in a warm border or in a sunny corner of a rockery it produces clouds of yellow flowers each morning throughout July, and more sparingly through August and September. Fairly hardy and propagated by cuttings.

The illustration gives a fair representation of the flowers and growth, but the brilliant colouring enters so much into the charm of these plants that it is hard to do them justice in a photograph.

Helianthemum alyssoides.

A low, compact little shrub, with canary-yellow flowers without any blotch, and of doubtful hardiness. As a garden plant it is less robust than many other yellow-flowered species.

Helianthemum candidum.

A fine, erect-growing plant 2ft. to 3ft. high.

Leaves somewhat larger than those of *H. algarvense*, and of a greyish shade.

Flowers bright yellow, with a broad, dark chocolate eye. The flowers are held well above the foliage and are produced at intervals from Midsummer until the autumn.

A fairly hardy shrub, one of the best of this colour and, in the middle of July, one of the most showy.

Helianthemum formosum.

A low shrub with curious flat or horizontal growth. Leaves 1in. to $1\frac{1}{2}$ ins. in length with prominent main rib of grey-green, silvery and downy on the under side.

Flowers bright canary-yellow, with a brilliant chocolate blotch on each petal. Blossoms single or in clusters on short stems.

This is the most showy of the yellow sun roses, the flowers being larger than those of *H. algarvense*, while the blotches are distinct on each petal instead of forming a continuous band. It is one of the best garden *Helianthemums* and a group of three or four makes a bright patch of colour on a warm border or bank facing south in June and July. Fairly hardy, cuttings root freely. In Nurseries it is often known as *Cistus formosus*.

Helianthemum formosum var. *unicolor.*

A pure yellow form without the blotch; flowers slightly smaller with a distinct primrose scent.

Helianthemum halimifolium.

A tall growing, slender species, sometimes as much as 5ft. in height or more when grown against a south wall.

Leaves narrow, 1in. to $1\frac{1}{2}$ ins. in length, the young foliage being pale silvery-grey, turning to a dull green as autumn advances.

Flowers bright canary-yellow, $1\frac{1}{2}$ ins. to 2ins. across, with a small chocolate blotch at the base of each petal, this blotch gradually becomes less marked as the

season advances, until in the late blooms it is quite absent. The flowers are in loose panicles, on long, upright, stiff stalks, sometimes a foot in length, and of a deep green, contrasting with the young grey growths.

Not one of the hardiest, it withstands most winters, but is apt to die back when the plants are of any age. Not so showy as the dwarf *H. algarvense*.

Helianthemum Libanotis.

A dainty, dwarf, erect-growing shrub, about 12 ins. to 18 ins. in height.

Leaves small and narrow, of a dark glistening green.

Flowers clear canary-yellow, produced singly or in pairs at the end of the shoots.

Requires a warm, sheltered place on a rockery and needs to be well protected from frost. A native of Portugal.

Helianthemum lunulatum.

A dense, much-branched little shrub, forming a compact cushion-like growth, 9 ins. high.

Leaves small, grey-green, stalkless, not more than $\frac{1}{4}$ in. to $\frac{1}{2}$ in. in length, and closely packed on the small woody stems.

Flowers clear yellow, small, with a little orange spot at the base of each petal. The blossoms appear singly each day from a terminal cluster of buds.

A charming, hardy, little rockery shrub, producing masses of small yellow flowers throughout July and occasionally on into the autumn.

Helianthemum umbellatum.

A choice, erect, evergreen plant, 12ins. to 18ins. high.

Leaves small, narrow, pointed, of dark shining green, paler and downy on the under side.

Flowers white, cup-shaped, with yellow centre, borne in clusters on slender, upright stalks.

The charm of the plant lies in the bright-red young growths, quite as much as in the flowers. This delightful little *Helianthemum* is not the most hardy and should be given the warmest place at the foot of a south wall or on a rockery. The yellow *H. Libanotis* forms a good companion plant.

Helianthemum vineale.

A trailing little evergreen plant, only a few inches in height.

Leaves dark glossy green, paler on the under side.

Flowers small, yellow, in terminal clusters in June and July.

A hardy shrub, increased by cuttings or seeds. Only useful as a rock or wall plant.

Helianthemum vulgare, Common Sun Rose.

A dwarf, evergreen shrub, only a few inches high, common on gravelly and chalky loam.

Leaves about 1in. to 1½ins. long, narrow, with a prominent mid-rib, dark green above, silvery on the under side. The size and colour of the leaves vary considerably.

Flowers bright yellow on short stalks. If the stamens are gently touched, they have a curious habit of falling back on the petals.

From a garden point of view *H. vulgare* is only interesting as having been the parent of numerous beautiful sun roses. Sweet describes many which now appear to be lost to cultivation. However, new and brilliantly coloured varieties are now constantly being introduced. The very useful trial of these plants at Wisley, during 1924—1925, will doubtless bring forth many charming forms, with large flowers of most delicate colouring.

As ground carpeters for planting on dry banks, in the crevices of a dry wall, or in fact in any place where they are exposed to full sunshine sun roses will thrive and give a most brilliant display of blossom in June and July. Though seldom exceeding one foot in height, they cover many square yards of ground where space is available. Like their first cousins the *Cistus*, they are not easy to transplant and are safest planted from small pots. Sun roses are hardy, but dislike excessive wet, particularly as the plant ages. Cuttings root freely under a hand-light in early autumn. Seeds also germinate readily and often give new shades of colour. Among the most useful garden forms are *H. Fireball*, brilliant flame-coloured, one of the most showy, and *H. chamaecistus*, deep wine colour.

VI.

COTONEASTERS.

THE various species of Cotoneaster form a delightful group of shrubs and small trees, of which the majority are well adapted for use as decorative garden plants. Effective when in blossom in early summer, they are doubly so in the early autumn when wreathed with scarlet berries which, if they escape the birds, last well into the new year.

No plants give a better return than Cotoneasters, the evergreen species, *C. Henryana*, *C. salicifolia*, and its varieties, and *C. thymaefolia*, with dark handsome foliage throughout the winter, being among the best, on the other hand, some of the deciduous kinds assume brilliant shades of red and crimson before the leaves fall, *C. horizontalis* and *C. bullata* being typical examples. Cotoneasters, therefore, give us first blossom and later berries and rich autumn colouring in the case of the deciduous species or evergreen foliage throughout the winter.

A large number of them have been brought from the temperate regions of Northern Asia and the Himalayas. A few are natives of Europe and one only of Great Britain. During the last few years a very considerable number of new species have been imported into the

country, all of which have some distinct botanical interest while the greater number are in the first rank of garden shrubs.

They vary so widely in habit and growth that they lend themselves to planting in many ways. *C. frigida* makes the best standard tree planted as a single specimen on grass, or standing above other shrubs where it is equally handsome. *C. Henryana* and varieties of *C. salicifolia*, *C. Franchetii*, and *C. pannosa* are well adapted for grouping in a belt or shrub border where they have room to develop into fairly large bushes, while the well-known *C. Simonsii* is equally good for grouping in a wild garden or planting in a game covert. *C. amoena* and *C. rotundifolia* are useful for planting at the front of a shrubbery.

To see Cotoneasters at their best when in fruit plant them where the sun lights up the scarlet berries in the afternoon—in a good fruit year they become a dazzling wealth of colour.

Cotoneasters are most satisfactory as wall coverers, they do not seem to mind which way the wall faces and thrive quite well when looking north or east. Treated in this way they attain a good height without requiring much nailing and retain their berries for many months. For a low, warm wall under a window where there are only a few feet to be covered or on a terrace of dry wall *C. horizontalis* is the ideal plant.

THE FOLLOWING ARE THE BEST IN THE
VARIOUS SECTIONS:—

Strong-growing shrubs.

- C. Dielsiana.
- C. Franchetii.
- C. frigida.
- C. Henryana.
- C. multiflora.
- C. salicifolia var. floccosa.
- C. salicifolia var. rugosa.

*Spreading species only a few feet in height, evergreen or
sub-evergreen.*

- C. amoena.
- C. horizontalis.
- C. microphylla.
- C. rotundifolia.

Dwarf section for rock-work.

- C. adpressa.
- C. congesta.
- C. humifusa.
- C. thymaefolia.

As wall plants.

- C. Franchetii.
- C. Henryana.
- C. horizontalis.
- C. microphylla.
- C. salicifolia var. rugosa.

CULTIVATION.

Cotoneasters require no special treatment and are among the easiest of shrubs to grow. They are not particular as to soil and are quite happy in any well-drained garden ground, but resent heavy clay and water-logged land. Provided that it is well drained they will grow in quite poor land, though a light loam is the ideal soil. They are not perhaps the best of plants to transplant. Small plants that have been transplanted within the last year or two give the best results and, once planted, they ask for nothing more than to be kept free from weeds and given ordinary garden cultivation. Little or no pruning is necessary, except that the stronger species should have their branches slightly thinned out and any straggly shoots shortened back.

All Cotoneasters are hardy. In severe winters they naturally lose their leaves earlier but are rarely injured by frost.

PROPAGATION.

Cotoneasters are easily propagated both by cuttings and from seeds. Cuttings of half-ripe wood will root fairly readily under a hand-light or preferably with a little heat, while seeds should be sown as soon as they are ripe for otherwise they are slow to germinate.

Fortunately grafting is seldom practised with Cotoneasters. Where suitable plants are available layering is a quick and easy method.

Cotoneaster acuminata.

A tall deciduous shrub of upright habit, 10ft. to 12ft. high.

Leaves 1in. to 2ins. long, half as wide, pointed, rich green on the upper side, the under side a much lighter shade.

Flowers pinkish-white during June in small clusters ; followed by handsome scarlet fruits.

This native of the Himalayas is somewhat closely related to *C. Simonsii* but has larger and more tapering leaves. It is a good garden shrub.

Cotoneaster acutifolia.

A wide-spreading deciduous shrub of graceful habit sometimes 8ft. to 12ft. high with drooping branchlets.

Leaves oval, 1in. to 2ins. long, of a full green.

Flowers white, small, in clusters of three or four opening in June ; fruits red, turning black when fully ripe.

This native of Chinese Mongolia resembles *C. lucida*, but the leaves of *C. acutifolia* are not such a bright green.

Cotoneaster adpressa.

A dwarf stiffly branched, deciduous bush of very spreading habit, eventually 15ins. to 18ins. high.

Leaves $\frac{1}{4}$ in. to $\frac{1}{2}$ in. long.

Flowers small, pinkish-white, half-open, followed by small, spherical, bright red fruits.

A native of China, this species is allied to *C. horizontalis* though they are easy to distinguish. It is a fascinating rock garden plant of prostrate habit, the branches rooting freely wherever they touch the ground.

Cotoneaster affinis.

A deciduous shrub 8ft. to 10ft. in height.

Leaves 2ins. to 3ins. long, oval.

Flowers pinkish-white in June, followed by dark plum-purple fruits.

A native of the Himalayas, it has a distinct short-branched, stiff habit.

Cotoneaster ambigua.

A deciduous species allied to *C. acutifolia*, 4ft. to 6ft. high.

Leaves elliptic, ovate, 1in. to 2ins. long, $\frac{1}{2}$ in. to 1in. wide, densely woolly beneath.

Flowers 5 to 10 in corymbs, fruits black, globose.

A native of Western Szechuan, China.

Cotoneaster amoena.

A compact, evergreen bush found by Wilson in China ; seldom more than 5ft, or 6ft. in height.

Leaves $\frac{1}{2}$ in. to 1in. long, oval, pointed, shining green on the upper side, grey and downy beneath.

Flowers white produced in clusters during June, and later rich red, round fruits.

A good garden shrub, and quite easy to grow.

Cotoneaster bacillaris.

A tall, deciduous species 15ft. to 20ft. high and often as much in diameter.

Leaves oval, 2ins. to 3ins. long.

Flowers white, freely produced in clusters during May and June and followed by a profusion of purplish-black fruits.

It is found high up in the Himalayas, where the wood is greatly prized by the natives for its toughness and suppleness. A very useful species of graceful growth,

thriving in a damp situation and valuable for planting near water where its drooping branches are seen to advantage.

Cotoneaster bullata. (syn. *C. moupinensis* var. *floribunda*).

A distinct deciduous bush, 10ft. high.

Leaves 2ins. to 3ins. long, pointed, of a dark glossy green.

Flowers pinkish-white in June but not showy, the charm of the plant lying in its brilliant red fruit in autumn.

One of the best deciduous species. The variety *macrophylla* has very large leaves and beautiful clusters of fruit.

Cotoneaster buxifolia.

This native of Southern India, where it is found in the Nilgiri Hills is a vigorous evergreen shrub sometimes 10ft. in height, but more often an irregular bush 5ft. or 6ft. high.

Leaves $\frac{3}{4}$ in. in length, rich green on the upper side, much paler on the underneath.

Flowers white in small clusters during June, followed by large red berries.

A useful garden plant, whether grouped in a shrub border or planted singly, and one that will succeed in any well-drained soil.

Cotoneaster congesta (syn. *C. macrophylla* var. *glacialis* and *C. pyrenaica*).

A delightful little dwarf evergreen plant found at a high altitude in the Himalayas.

Leaves very small, $\frac{1}{4}$ in. to $\frac{1}{2}$ in. long, rich green, paler on the under side.

Flowers bluish-white, very small, produced in June ; fruits red.

A very useful low, rock shrub seldom more than one foot high, it is seen to perfection when creeping over a rock, its dense twiggy little branches sparkling with tiny blossoms in summer, or in the autumn with bright vermilion berries. It is also a good plant for covering a bank. Though sometimes confused with *C. microphylla*, it is easily distinguished by the short branches, the leaves being also of a much lighter shade of green.

Cotoneaster Dielsiana. (syn. *C. applanata*).

A vigorous growing, deciduous shrub, reaching 10ft. in height and as much in diameter, with long arching, graceful branches.

Leaves $\frac{3}{4}$ in. to $1\frac{1}{2}$ ins. long, ovate, grey and downy on the under side when young, with prominent veins.

Flowers white, borne in small clusters in June ; the fruits bright red in early autumn.

One of the most striking of the deciduous species and an attractive garden shrub. A native of China, it was first sent out as *C. applanata*, but it was found that it had been previously named *C. Dielsiana*.

Cotoneaster divaricata.

A deciduous bush of wide-spreading habit, sometimes growing to a height of 5ft. or 6ft.

Leaves ovate, $\frac{1}{4}$ in. to 1in. long, half as wide.

Flowers pinkish-white, singly or in threes ; fruits rich red.

A native of China, introduced by Wilson. When in fruit this species forms a very attractive bush.

Cotoneaster foveolata.

A deciduous species of free growth, ultimately reaching 20ft. in height.

Leaves oval, 1in. to 3ins. long, of a full green.

Flowers pink tinted ; fruits red at first, then black.

A native of Western Hupeh and a most beautiful species in the autumn when the leaves change to brilliant shades of red and orange.

Cotoneaster Franchetii.

An attractive Chinese, evergreen shrub, sometimes 10ft. in height.

Leaves 1in. to 1½ins. long, pointed, of a deep rich green, the under side being silvery and downy.

Flowers white with a tinge of pink, produced in clusters of six to twelve blossoms in May and June. Later the fruit is very showy in clusters of curious egg-shaped berries, flattened at the top, of a bright vermilion-red.

A very attractive garden plant either for a shrubbery border or as a climber on an east or north wall where its brilliant berries are retained till March.

Cotoneaster frigida.

A vigorous growing deciduous shrub, which can also be grown as a standard tree 15ft. or more in height, with a thick, dense head, it is the strongest growing and one of the most beautiful species of the genus.

Leaves 3ins. to 5ins. long, narrow, tapering at each



Cotoneaster frigidus, in flower.

end, of a full green, very woolly when first unfolded in the spring, afterwards smooth. There is a prominent mid-rib on the under side of the leaf which turns red in autumn.

Flowers white, very freely produced in corymbs or clusters along the almost horizontal branches. The fruits are bright red, the size of holly berries and produced in loose bunches.

Brought from the Himalayas one hundred years ago, this beautiful berried shrub has not, until quite recently, been planted nearly so freely as it deserves to be. It is a most attractive shrub when in full blossom in June and even more so when thickly hung with a wealth of scarlet berries which last until February if the birds do not attack them. These berries are surprisingly heavy and were borne in such masses in 1924 that many branches on young trees were broken down by the weight. A most charming garden shrub, it thrives in a light loamy soil, but is not fastidious. It also makes a good town plant. Two illustrations are given of this plant, one showing a spray in flower in early summer, another of a branch in October, when it is in full fruit.

Cotoneaster frigida var. *Vicarii*.

A vigorous growing variety, raised at Aldenham—of stronger growth than the type, it promises to become a valuable garden plant. The leaves are much larger than the common *C. frigida* and in mild winters it is practically an evergreen. The fruit is also larger and in brilliantly coloured clusters.

Cotoneaster glaucophylla.

An evergreen species of spreading growth.

Leaves oval, 3ins. long, dull green above, paler beneath.

Flowers white, freely borne in lax corymbs in July ; fruits dull red.

A native of China. This species is closely allied to *C. serotina* but has longer, more drooping branches and larger leaves.

Cotoneaster Harroviana.

An evergreen bush of graceful habit 6ft. to 8ft. in height ; a native of Yunnan.

Leaves oval, of somewhat leathery texture, 1in. to 2½ins. long, half as wide.

Flowers white with reddish anthers, freely produced in June, borne in close corymbs ; fruits rich red.

A good evergreen flowering shrub, showy in fruit, and allied to *C. pannosa*, but with larger leaves which are of a richer green colour.

The corymbs of flowers and the fruit are also larger than those of *C. pannosa*.

Cotoneaster hebeophylla.

A free growing deciduous shrub from China, 10ft. in height and wide in proportion.

Leaves roundish, up to 1½ins. long and 1in. wide.

Flowers small, white, in corymbs of six to twelve or more in May ; fruits red.

A rare species, first found by Forrest in Yunnan.



Cotoneaster frigidus, in berry.

Cotoneaster Henryana (syn. *C. rugosa* var. *Henryana*).

A vigorous growing evergreen species with long arching, sparsely branched stems, 10ft. in height when fully grown.

Leaves 3ins. to 5ins. long, narrow, pointed, rough, leathery, of a rich green, often with a bronzy hue in winter, much paler on the under side, which has prominent veins. The young wood assumes a dark brown shade in autumn.

Flowers white, produced during June in corymbs 2ins. in diameter. The crimson fruit is most effective in autumn.

Quite one of the best of the stronger growing Cotonasters, forming a useful plant for a shrub border or as a climber for covering walls or fences. A native of China and first found by Wilson.

Cotoneaster horizontalis.

A charming, low, deciduous shrub, growing in the open it forms a rounded bush 3ft. to 4ft. in height but spreading over the ground to a good deal more.

Leaves $\frac{3}{8}$ in. to $\frac{3}{4}$ in. long, broad, of a lustrous green—many remaining until Christmas.

Flowers round rose coloured buds, changing to pinkish white when open, later on small, round, deep red fruit.

Sparkling with tiny blossoms in May, it is most beautiful and again in October when the foliage takes a brilliant autumn tint, with the red fruit appearing amongst the leaves. It is seen at its best when planted against a low wall, which it covers with horizontal

branches, in such a position it requires little fastening.

It can be rooted from cuttings. Seed also germinates readily and self sown seedlings are often to be found round an old plant.

Cotoneaster horizontalis var. *perpusilla*.

A rare species from Hupeh, a province of China, said to have smaller leaves and to be dwarfer than the type.

Cotoneaster horizontalis var. *variegata*.

A neat silver variegated form, smaller and slower growing than the type. It makes a dainty little rockery shrub.

Cotoneaster humifusa (syn. *C. Dammeri*).

A distinct, creeping evergreen species from Central China, with slender trailing branches.

Leaves 1 in. to 1½ ins. long, oval, of a dull deep green, paler on the under side.

Flowers white, singly or in pairs, followed by cherry-red berries.

A valuable plant for covering banks or trailing over rocks, for it never grows more than a few inches from the ground. The bright fruit in the autumn makes it most attractive at that time.

Cotoneaster hupehensis.

A large, wide-spreading, deciduous shrub, up to 8 ft. high, and more in diameter, with slender, arching branches.

Leaves ovate, ½ in. to 1¼ ins. long, ⅓ in. to ¾ in. wide.

Flowers white, very abundant, produced in June; fruits bright red.

A native of China and first introduced by Wilson. As a flowering bush, this species rivals *C. multiflora*, for, although the individual blossoms are not quite so large, they are less covered by the smaller leaves. When covered with flowers it suggests a *Spiraea* bush more than a *Cotoneaster*.

Cotoneaster integerrima (syn. *C. vulgaris*).

A spreading, deciduous, low bush in the wild state, growing much taller in cultivation.

Leaves $\frac{3}{4}$ in. to $1\frac{1}{2}$ ins. long, roundish and cottony on the under side.

Flowers pinkish white, produced in May ; fruits red.

Of no value as a garden plant, but interesting botanically as the only species found wild in Britain.

It has been found growing on the Great Orme's Head in N. Wales, but is now rare.

Cotoneaster lactea.

An evergreen shrub of free growth, 6ft. to 10ft. high.

Leaves oval, 1 in. to $2\frac{1}{2}$ ins. long.

Flowers creamy-white, freely borne in loose panicles ; fruits red, small, but very numerous, hanging on the branches well into the new year. Introduced by Forrest from China.

Cotoneaster Lindleyi (syn. *C. Arborescens* and *C. nummularia*).

A robust, deciduous shrub from the Himalayas, 10ft. to 15ft. in height, of a loose branching habit.

Leaves 2 ins. to 3 ins. long and half as broad, rounded,

of a deep green on the upper side, paler and woolly beneath.

Flowers white, in clusters of six to twelve turning into black fruit in autumn.

A strong and almost coarse-growing species, but not by any means the most showy. A good bush for a wild garden or rough woodland, and also for planting near water.

Cotoneaster microphylla.

An evergreen shrub spreading close to the ground and seldom more than 3ft. to 4ft. high in the open, but much more when trained against a wall.

Leaves very small, $\frac{1}{4}$ in. to $\frac{1}{2}$ in. long of a dark shining green.

Flowers white, generally produced singly, but sometimes growing two or three together. The fruit are small and red, rather apt to be buried in the foliage.

A most useful garden shrub for planting in the rougher parts of a rock garden to cover banks, or it may be trained on a north wall. In fact, it may be grown in any position and in any well-drained soil.

Cotoneaster multiflora.

Leaves $1\frac{1}{2}$ ins. to 2ins. long, rounded, downy on the under side.

Flowers white, very freely produced in spreading clusters, followed by masses of brilliant scarlet, elongated fruit.

A native of China, whence it was introduced nearly a century ago. It flowers in May or early June and it is perhaps the most showy, with cascades of blossom

clothing each arching branch. An excellent border or shrubby plant.

Cotoneaster pannosa.

An evergreen species from China, forming a handsome, free-growing, shrub with graceful drooping branches up to 8ft. or 10ft. in length.

Leaves $\frac{3}{4}$ in. to $1\frac{1}{2}$ ins. long, oval, sharply pointed, of a medium green, almost a sage-green on the upper side and quite soft to the touch, the under side grey and woolly.

Flowers white with violet stamens, freely produced in close corymbs. The fruits are small and of a dull red.

It was first confused with *C. Franchetii*, but it is easily distinguished by the dull green of the leaves and the small fruits. This species promises to become a good garden plant.

Cotoneaster rotundifolia.

An evergreen or sub-evergreen species retaining a good proportion of its leaves well into the following spring, except in severe winters.

Leaves $\frac{1}{4}$ in. to $\frac{1}{2}$ in. long, rounded, of a dark shining green.

Flowers white, with a touch of pink, freely produced in early summer on the tiny branchlets singly or in pairs.

A native of the Himalayas, this delightful *Cotoneaster* is easily distinguished by its large, deep red, globular fruits, which are generally produced singly, and which remain on the plants until early spring.

It forms a stiff-branching low shrub, 5ft. in height and quite one of the best. It will grow almost anywhere.

Cotoneaster rubens.

A prostrate, nearly evergreen, shrub of fairly rapid growth. Branches stiff and rather stout, covered when young with a fine silky down.

Leaves ovate, acute, $\frac{1}{2}$ in. long, and half as wide, shortly stalked, deep glossy green, downy beneath.

Flowers produced in June on short lateral leafy shoots, in flattish clusters of six to ten, white, spreading, not unlike those of *C. microphylla*, $\frac{1}{3}$ in. across. Fruits ripe in September, $\frac{1}{3}$ in. diameter, roundish, but flattened at the top, rich deep red, skin dull. The berries last until Christmas.

This species was seen to perfection near the lake in the R.H.S. garden at Wisley, where it was brilliant with a wealth of crimson fruit. It promises to become a most attractive, dwarf shrub, well worthy of a place in any garden.

Cotoneaster salicifolia.

It is extremely doubtful whether the true species is to be found in English gardens. It was first collected by the Abbé David in China and the following varieties were introduced later by Wilson.

Cotoneaster salicifolia var. *floccosa.*

A vigorous evergreen shrub or small tree, reaching 15 ft. in height, with long, thin, arching branches.

Leaves 2 ins. to 3 ins. long, narrow, pointed, dark lustrous green on the upper surface, almost rough to the touch, grey and woolly on the under side with prominent red veins in autumn, arranged in fish-bone

fashion. The young wood is particularly handsome, assuming a reddish-brown shade as if it had been varnished.

Flowers white in corymbs of ten or more blossoms, freely produced in July, a full month later than most Cotoneasters. In autumn the gorgeous red fruits form a mass of colour which lasts well into the winter.

A native of China, it only found its way to this country in 1908, and when better known this charming species is sure to be widely planted. It can be run up as a standard or grown as a bush.

Cotoneaster salicifolia var. *rugosa*.

A strong, vigorous growing variety. The leaves are slightly larger and more wrinkled than in *floccosa*. A charming shrub when in fruit and a really good garden plant.

Cotoneaster serotina.

A new and rare semi-evergreen shrub at present 5ft. to 6ft. high at Wisley, which may eventually reach a height of 10ft. The habit is graceful; the branches slender and slightly drooping, covered when young with appressed white hairs, later becoming smooth and reddish-brown.

Leaves 2ins. to 3ins. long and half this in width, egg-shaped, or oval, shortly stalked with wedge-shaped bases and acute tips, rich green above, greyish beneath, the under side covered with soft short hairs.

Flowers white, in flattish clusters 2ins. to 2½ins. across, produced in July on short lateral shoots.

Fruits small, globosa, "sealing-wax" red, ripe in November and in mild seasons lasting until the end of March.

A native of Western China.

Cotoneaster Simonsii.

A strong, upright growing species from the Khasia Hills in Assam. It forms a large branching bush, generally considered deciduous, though it retains its leaves and berries well into the winter.

Leaves $\frac{1}{2}$ in. to 1 in. long, broad, pointed, of a shining deep green on the upper side, much paler beneath. The young wood is covered with brown down.

Flowers white, in small clusters in early summer. The bright vermilion fruits in autumn form the great attraction of the plant.

Growing in almost any position, it is a valuable plant for grouping in a shrub border or wild garden, and for planting amongst choice shrubs as a nurse plant. It can also be used with advantage in game coverts.

Cotoneaster thymaefolia.

A quaint, little, low-growing evergreen shrub, found high up in the Himalayas.

Leaves very small, not more than $\frac{1}{4}$ in. to $\frac{1}{2}$ in. at most, narrow, square at the tips, of a lustrous dark green on the upper side, grey and downy underneath.

Flowers white, tinted-pink, generally produced singly in June. Fruits small, round, of a rich crimson-red.

An excellent dwarf rock-work shrub, forming a dense mass of stiff, little branches. It is considered by some

botanists to be only a variety of *C. microphylla*, but is decidedly smaller in growth and the foliage is brighter.

Cotoneaster turbinata.

A vigorous, evergreen shrub of upright growth, 10ft. to 12ft. in height.

Leaves 1in. to 2ins. long, narrow, oval, pointed, of a deep green on the upper side, covered on the under side with white down.

Flowers white with rosy anthers borne in corymbs some 3ins. across in July and August. Fruit globular, rich red in the autumn.

A native of China, it is a valuable evergreen and, being the latest *Cotoneaster* to flower, it makes a good garden plant.

Cotoneaster Zabelii.

A deciduous shrub, 5ft. to 8ft. high, allied to *C. intergerrima*.

Leaves oval, 1in. to 1½ins. long, about half as wide, dull green above, with brownish grey felt beneath.

Flowers small, rosy-pink, in clusters of four to eight or ten; fruits crimson-red in nodding or drooping clusters.

It was introduced by E. H. Wilson from China, where he found it growing very abundantly in Hupeh.

VII.

CYTISUS AND GENISTA (BROOMS).

IN this group are included various species of both *Cytisus* and *Genista*, the botanical difference between them being so small that it need not be considered from the horticultural point of view. Amongst them are to be found many of the most charming flowering shrubs, including the common yellow Broom of our heaths and commons, which is the parent of many of the most showy varieties of the *Andreanus* group, to which belong Daisy Hill and the delicate cream-coloured Moonlight. The flowering season begins in spring and continues throughout the summer and early autumn, indeed one species, *Genista ovata*, may carry it on well into October.

Brooms may be used in various ways in a garden scheme. The most effective of all is, perhaps a bed of one variety, or a group in front of evergreens where they will provide a fine mass of colour. Dwarf bushes planted in groups of ten or twelve with a few standards of the same kind rising above them, so as to break the level outline, form an attractive feature in any garden.

The stronger Brooms are well adapted for planting in a wild garden. First comes the early *praecox*, then the white Portugal, *Cytisus scoparius* and its many forms, followed by the late Spanish (*Spartium junceum*)

which with its large yellow flowers is quite one of the most telling. *C. kewensis* is typical of the varieties of moderate growth, and looks well when grown on some low rock-work where it forms great masses covered with creamy-white blossom.

Varieties of this type may be used with advantage along the sides of a path leading up to a rockery. Such as, for instance, *C. Dallimorei* with red flowers, and earlier in the spring *C. Osborni* with bronze buds and primrose flowers. Later in the summer comes *Genista cinerea* with silky-yellow flowers and *Cytisus nigricans* with upright yellow spikes of blossom, which carries on the season into August.

All these are of moderate growth, seldom exceeding 3ft. or 4ft. in height, though *Genista cinerea* will in time grow taller than the others.

Some of the dwarfer growing brooms are excellent as rock shrubs. *C. Beanii* is a charming little plant with glistening yellow flowers; *C. Ardoinii*, *C. pilosa* and *G. horrida* are all well worth cultivating, the last named forming a delightful grey cushion. *Genista hispanica* is a valuable plant for covering the ground on banks, or in any warm border. When not in flower it forms a close-growing dwarf evergreen bush, while in full blossom it is entirely covered with one mass of small gorse-like golden-yellow flowers.

CULTIVATION.

The cultivation of the various varieties of *Cytisus* and *Genista*, like that of many of our flowering shrubs, is quite simple. It must, however, always be remem-

bered that, except in the young state, they do not transplant easily. It is best, therefore, to begin with small plants, which may be planted out from pots without much disturbance of the roots. A plant gins. to 12ins. high in a 4in. or 5-inch pot may generally be planted with safety. Larger specimens, even if they do not die, are quickly outgrown by younger plants. Brooms dislike a wet, cold clay, but otherwise they will grow in any garden soil. On a clay soil they should be planted on a bank or raised bed so they are well drained and then if the clay is improved by the addition of leaf-mould or light soil, they can be grown with success. A light loam or sandy soil is however that which gives the best results, and the plants should be fully exposed to the sun and air. Early autumn or spring are the safest times at which to plant.

Many members of the Broom family are apt to become straggly and shabby as they get old. To avoid this, it is well to prune them back immediately after flowering, but care should be taken not to cut into the old hard wood, as they do not always respond kindly to this treatment. *C. nigricans* and others that bloom late should be pruned in the spring, just before the growth begins again.

Some brooms will stand gentle forcing and form most effective house plants. Standards are the most useful for this purpose but to get really good results both standards and bushes must be grown in pots for the previous year.

PROPAGATION.

The seeds of all kinds of *Cytisus* and *Genista* germinate readily and this is the best method of raising plants. The wild species, such as the common Brooms and *Spartium junceum*, come true from seeds, while seeds of hybrids, such as the *Andreanus* group give a number of differently coloured forms. Some varieties, particularly the small, low-growing kinds can be easily rooted from cuttings of half-ripe wood, kept close in damp sand. In nurseries the more usual way of propagating the choicer sorts is to graft them in the early months of the year on small stocks of the common broom, after grafting they should be kept close for a time in gentle heat. Standards must always be grafted on Laburnum and require a good deal of care. The stocks should be about four feet in height.

A selection of twelve of the stronger-growing Brooms :—

- C. albus.
- C. Cornish Cream.
- C. monspessulanus.
- C. nigricans.
- C. Osbornii.
- C. praecox.
- C. sessilifolius.
- C. scoparius *var.* Andreanus "Firefly."
- C. scoparius *var.* sulphureus.
- Genista cinerea.
- „ virgata.
- Spartium junceum.

A selection of twelve of the best low - growing Brooms :—

- C. Ardoinii.
- C. Andreanus *var.* prostratus.
- C. Beanii.
- C. Dallimorei.
- C. decumbens.
- C. kewensis.
- C. purgans.
- C. purpureus.
- Genista germanica.
- „ hispanica.
- „ sagittalis.
- „ tinctoria.

Cytisus albus. White Spanish Broom.

A graceful, fast-growing shrub, reaching 6ft. to 8ft. in height.

Leaves very small and inconspicuous on the slender wiry stalks.

Flowers small, pure white, produced along each stalk in such profusion that the whole bush is a mass of white.

A group of this broom is very attractive when seen in full flower about the middle of May. It will thrive in any well-drained soil, and should be cut back immediately after flowering, since it flowers on the growth formed during the summer.

Cytisus albus *var.* *roseus*.

A very attractive white variety, not of such robust growth as *C. albus*. The long, slender stems are

covered in May with pink or perhaps purple buds, which open pure white, except for a shade of pink on the standards. This is a pretty variety, the pink buds intermingling with the fully expanded white flowers. It is free-growing, but never so large as the common white broom, and is considered a good garden plant.

Cytisus Ardoinii.

A charming dwarf Broom, seldom more than 6ins. in height. A native of the Maritime Alps.

Leaves trifoliate, hairy, each on its own little stalk.

Flowers golden-yellow in terminal clusters in spring.

Seeds germinate freely, but do not always come true, owing to the fact that this species hybridizes readily with other species. One of the best rock plants of this family, it grows freely in any well-drained soil.

Cytisus Beanii.

A seedling from *Ardoinii*, but taller, and a much choicer plant than the parent.

Leaves small, narrow.

Flowers golden yellow, produced in sprays on the last year's wood. The whole plant is enveloped in blossom during May, making it a delightful little shrub.

Of the many dwarf yellow Brooms, this is one of the most beautiful of the smaller growing kinds and is an excellent plant for a sunny corner of the rock garden.

Cytisus Cornish Cream.

This beautiful variety was raised in Mr. P. D. Williams' garden in Cornwall from seed of *C. Dallimorei*.

A plant of robust growth, producing masses of blossom in May.

Buds cream coloured, developing into flowers with almost white standards and clear canary-yellow wings.

A delightful garden plant which, when better known, will be more largely planted.

In addition to gaining the Award of Merit of the R.H.S., it received a special award as the best new plant of the year. Quite easy to cultivate, it forms a good specimen as a dwarf or as a standard, and seeds freely, but it is doubtful whether seedlings will come true. Cuttings or grafts are the safest means of propagating it.

Cytisus Dallimorei.

A beautiful hybrid, raised at Kew from a cross between *C. Andreanus* and the common white Broom.

Leaves very small, deep green, stems flattened, almost four-sided.

Flowers mauve-pink, the keel shading into deep crimson.

A very distinct and free-flowering variety, but not of the most robust constitution and is somewhat difficult to start into growth. It is best planted in a warm, well-drained soil, in full sun.

Cytisus decumbens.

An ideal rock-work shrub of prostrate growth creeping over the rocks, while in May it is a mass of bright yellow blossom, produced on the last year's wood.

Leaves very small, about $\frac{1}{2}$ in. long, simple, with very little or no stalk.

It revels in full sun and grows best when planted in light soil. Although introduced to this country more than one hundred years ago, it has never become a common shrub, and is still one of the best dwarf Brooms. It is quite hardy and can be increased by cuttings.

Cytisus kewensis.

This is quite in the front rank amongst Brooms. Leaves small. The flowers open a pale lemon changing to creamy-white and are produced freely on the previous season's wood. Drooping or almost prostrate in growth. It is usually at its best in the first week in May and makes a good standard, when grafted on Laburnum.

Cytisus leucanthus (syn. *C. schipkaensis*).

A deciduous, low-growing shrub, but not as useful as a garden plant as many of the more showy varieties.

Leaves trifoliolate, of a yellowish-green, with a paler reverse.

Flowers creamy-white, twelve or more in a terminal cluster.

This species is valuable for its habit of making young shoots round the flower head, and frequently flowering again on this young wood. The flowering period is thus considerably prolonged and extends sometimes into October.

Cytisus monspessulanus (syn. *Genista candicans*).

A robust-growing evergreen or sub-evergreen shrub, as much as 6ft. in height and with more foliage than most of the Brooms.

Leaves trifoliolate and downy on the under side.

Flowers small, bright canary-yellow, produced in clusters varying from three to seven.

Considered at one time to be tender, but it withstood the winter 1923-24 unharmed. Seed germinates freely. A native of the Mediterranean district, it thrives in a warm, dry soil.

Cytisus nigricans.

A desirable, late-flowering, deciduous Broom, reaching 3½ft. in height. Flowering on the young wood of the season, with long, stiff, upright racemes of bright yellow blossoms in July and August. The leaves trifoliolate, deep green in colour. One of the most useful garden shrubs, blossoming at a time when most flowering shrubs are past. Compact in growth, it forms a neat plant for growing in front of a border or shrubbery. It should be well pruned back each spring, and is propagated by seeds or cuttings. The flowers have a curious pungent smell.

Cytisus nigricans var. *Carlieri*.

This is practically synonymous with *C. nigricans*, possibly the flower species are larger and the colour richer.

Cytisus praecox.

One of the earliest to flower, being generally at its best by the end of April or early in May, and forming a thick, low, drooping bush.

Leaves small, on hard, wiry stems, and not appearing till after the flowers are over.

Flowers lemon-yellow, so freely produced as to envelop the whole plant.

One of the best garden Brooms for covering a dry bank or for a position high up on the rockery. Its one drawback is the unpleasant smell of the flowers and for this reason it should not be planted near the house.

This species can be increased by cuttings more readily than most brooms. The cuttings, about 2 ins. to 3 ins. long, should be taken in late summer; if they can be got with a heel, so much the better, and inserted in sharp sand. They should be kept quite close in propagating pits until rooted.

Cytisus praecox var. *alba*.

A pure white form, with smaller flowers and not such robust habit as the type. It is, however, quite a good plant for a hot, dry bank, and blossoms before *C. albus*.

Cytisus Osbornii.

This charming Broom was raised at Kew and is quite the best of the cream-coloured section, of medium growth. Its chief attraction is the bronze buds which are freely produced on the previous summer's wood.

Flowers pale cream, with buff standards, the wings on each side of the keel being a rich creamy-yellow.

It has none of the unpleasant smell of *C. praecox*. An excellent garden broom of medium growth and good habit.

Cytisus purgans.

A sturdy, upright-growing, little plant, with round hard stems, having parallel ridges in the bark.

Leaves small, narrow, stalkless.

Flowers golden-yellow on short stalks, generally produced singly in May.

A useful rock shrub.

Cytisus purpureus.

A spreading, deciduous, little shrub of prostrate growth. Trifoliate leaves on short stalks.

Flowers pinkish-mauve, produced in pairs and almost stalkless.

An attractive plant when covered with its mauve flowers in May, and for its deep green foliage late in the summer. Quite easy to grow.

Cytisus ratisbonensis (syn. *C. biflorus*).

A distinct species of robust growth, sometimes 7ft. in height, the branches inclined to be woody.

Leaves deciduous, trifoliate, large.

Flowers buff-yellow, standards bronzy, but varying a good deal, thickly crowded on long stalks in twos and fours, in early June.

This free-growing species is a native of Eastern Europe, but is not one of the most showy as a garden plant and can be easily raised from seed.

Cytisus scoparius.

The common Broom of our heaths and commons and one of the most beautiful of our native flowering shrubs.

Leaves small, trifoliate, and, although the plant is deciduous, the hard, ribbed stems always give it the appearance of an evergreen.

Flowers large, golden yellow, singly or in twos in May and June.

A good plant for naturalizing in any poor, waste land, or in the wild garden. It can be easily grown from seed sown in the spring. The seedlings should be transplanted when a few inches high, after this they soon become coarse and are then difficult to move. A light soil suits it best, where it often reaches ten feet in height. The common Broom is interesting as being the parent of many of the new and brilliant garden forms of the *Andreanus* class.

In olden days it had many uses, the seeds being roasted, ground, and used as coffee. It is also said to have been made into string.

Like Rosemary, the common Broom enters largely into the old folk-lore of flowers. In Scotland, when the Broom was full of blossom it was said to indicate a good harvest was to follow.

Cytisus scoparius var. *Andreanus*.

A showy form with large flowers, similar to the typical species.

Flowers with a bright golden-yellow standard, the lower petals being deep bronzy-crimson.

When first planted it is sometimes slow to start into growth, but, once well established, it forms a beautiful shrub, sometimes seven feet high.

Seedlings of this variety do not come true, however,

they give some pleasing variations, but propagation must be by grafting to obtain the true plant.

There are now almost too many varieties, in some cases there is very little difference. The following are some of the best known.

Cytisus scoparius var. *Andreanus* " *Butterfly*."

A strong-growing form of *Andreanus*. The keel more shaded and not so rich in colour.

Cytisus scoparius var. *Andreanus* " *Daisy Hill*."

A very attractive variety, raised in Mr. T. Smith's nursery at Newry. The standards are buff, shaded with pink, and the lower petals a rich madder-crimson. It flowers most profusely and is really a good garden variety of medium growth and forms a compact bush.

Cytisus scoparius var. *Andreanus* " *Daisy Hill splendens*."

Said to be a great improvement on the last named, the flowers are of similar colour but richer and larger. It is more vigorous in growth and when it has had a longer trial will become a very popular variety.

Cytisus scoparius var. *Andreanus* " *Donard Seedling*."

A beautiful new Broom, pale pink standard, shading into terra-cotta on the reverse side. Rich terra-cotta keel. Raised by the Donard Nursery Company in Ireland. *C. Dallimorei* being one of the parents.

Cytisus scoparius var. *Andreanus* " *Dragonfly*."

The best of the *Andreanus* section. Large yellow standard, the lower petals being a brilliant bronze-

crimson with yellow edges. One of the most showy of the Brooms.

A good garden plant, forming a shapely bush, 5ft. to 6ft. in height. It is also one of the best varieties for growing as a standard.

Cytisus scoparius var. *Andreanus* "Firefly."

Another showy seedling very similar to "Dragonfly."

Cytisus scoparius var. *Andreanus* "fulgens."

A distinct novelty of the *Andreanus* section with large flowers. Bronzy-amber standard, rich chocolate-crimson keel. This fine variety was also raised at Newry. Robust in habit, it promises to become a useful Broom.

Cytisus scoparius var. *Andreanus* "prostratus."

A dwarf, spreading form of *Andreanus*, excellent for creeping over rocks. When grown as a standard it forms a good drooping head. The flowers are identical with the type. Owing to its horizontal growth it is a valuable plant for a dry bank.

Cytisus scoparius var. *sulphureus* "Moonlight."

A beautiful and robust-growing form of the common Broom with large lemon-yellow flowers. It makes a good-sized shrub and is quite one of the best garden forms.

Cytisus scoparius var. *prostrata*.

A curious prostrate form of the common Broom, with the same large yellow flowers. It is seen at its best when planted on a high part of a rockery where it can

creep over a rock. It also makes a good standard with a compact drooping head.

Cytisus sessilifolius.

A graceful deciduous species.

Leaves trifoliolate, generally stalkless, deep green.

Flowers borne in slender racemes on the new wood in groups of from five to ten. Clear canary-yellow, each on a thread-like stalk.

An old plant but one that deserves to be more grown than it is, coming into bloom as it does in June after the majority of early Brooms are over. Grown as a standard it is a great favourite.

A native of Southern Europe, it has been cultivated in our gardens since the days of Parkinson and was included in the *Botanical Magazine* in 1794.

Cytisus supinus (syn. *capitatus*).

An upright-growing, deciduous plant, flowering on the young wood in June and July.

Leaves trifoliolate, downy, on short stalks.

Flowers deep yellow in terminal clusters.

Except in the colour of the flowers, this closely resembles *C. leucanthus*, but cannot be classed with the more showy varieties as a garden plant.

Cytisus supranubius.

A rare and distinct Broom, but it is doubtful whether it is hardy enough for inland districts. Grey-green, rush-like growths with but little foliage. The stems are covered with small white blossoms which appear from the joints of the previous year's wood in May.

The species derives its name from the fact that it is common on the Peak of Teneriffe.

Cytisus versicolor.

A small, deciduous shrub, probably a hybrid from *C. purpureus*.

Leaves trifoliate, on short stalks.

Flowers varying in colour from yellow to pinkish-mauve.

Not such a favourite garden plant as the more brilliant varieties.

Genista aetnensis.

The Etna Broom. A tall, slender, rather straggly-growing shrub, practically devoid of foliage. Valuable for the fact that it flowers late in July or early in August. Flowers yellow, produced somewhat thinly along thin rush-like stems of the current season's growth.

A very attractive species, if planted amongst other shrubs where its leggy branches are partially hidden. The bright yellow blossoms form a welcome mass of colour in the dulllest summer month.

Genista anglica.

A low, stiff-growing, native shrub.

Leaves smooth, small, pointed.

Flowers deep yellow, with a long, open keel, produced at the ends of the shoots and turning green as they wither.

A quaint little shrub for the rockery or rough border. The older wood is very thorny.

Genista anxantica.

A low-growing species, often confused with *Cytisus purgans*.

Leaves small, simple, the whole plant having a rush-like growth.

Flowers bright yellow in early May on the season's wood, and sweet scented.

A rockery shrub of compact growth. A native of the country round Naples, where it forms beautiful yellow patches.

Genista cinerea.

A charming late Broom, flowering early in July and making a neat, upright shrub, 7ft. or more in height, with long, slender, silky branches.

Flowers fragrant, bright yellow, produced on the previous summer's wood all along the branches, generally in threes on thin stalks.

Leaves very small, without stalks, of a greyish-green, the under side covered with silvery down.

This beautiful plant should be much more widely planted in English gardens. A magnificent specimen may be seen growing in the Cambridge Botanic Gardens, where it is in perfection in the last week in June; reaching some ten feet in height and as much through, it forms a wonderful shimmering cloud of yellow.

This handsome Broom was first introduced from south-western Europe.

Genista dalmatica.

Quite one of the best of the dwarf Brooms.

Leaves small, narrow, deciduous, on thin, angular stalks, very hairy.

Flowers golden-yellow, in terminal clusters.

Thriving well in partial shade, it is an excellent rock plant, and useful where a neat, dwarf plant can be used. When at its best, it forms thick masses about one foot high covered with its yellow flowers in May.

Genista germanica.

This is rather taller than *G. dalmatica*, and a useful garden plant owing to the fact that it is a late-flowering variety. It is often seen in full bloom in July. A hot, dry place suits it best in light, sandy soil.

Genista hispanica (Spanish Gorse).

A very useful dwarf shrub, forming thick masses of much branched, spiky, dull green. Never more than two feet in height. Covered in May and early June with terminal clusters of rich yellow flowers. It is quite hardy and grows well in any light soil. A dwarf shrub for the rougher part of a rockery, for banks, or for the wild garden.

Genista horrida.

A dwarf mountain species from Southern Europe. Although not so free-flowering as many Brooms, it is never the less a very effective plant, forming a dense, very spiny, cushion-like mass, of a delightful silvery-grey.

Leaves very small, opposite, which is unusual with Brooms, the only other variety with leaves arranged in this way being *G. radiata*.

Flowers deep yellow in terminal clusters in June. If it is to do well this species must be planted in a warm, sunny corner of a rockery.

Genista monosperma.

Of curious rush-like growth, almost without leaves.

Flowers creamy-white, produced in small racemes, growing from slender stems. The blooms are very sweet-scented but unfortunately this species is too tender for most English gardens.

Genista ovata.

A rare species, nearly allied to *G. tinctoria*, and resembling its variety, *mantica*.

Leaves dark glossy green, 1 in. to 1½ ins. long, slightly pointed at each end.

Flowers yellow in terminal racemes on the young wood.

The whole charm of the plant is the lateness of flowering, for it often continues well into October, long after most Brooms have ceased to flower. It is not much known in gardens, and is of rather doubtful hardiness, but should become a useful plant in the milder parts of the country.

Genista pilosa.

A low-growing native Broom, with twisted woody stems, forming a close, compact mass.

Leaves small and narrow, almost entirely confined to the young shoots.

Flowers golden-yellow, which completely cover the plant in May.

A good rockery plant and excellent for covering a dry bank. It is found growing in profusion in parts of North Africa.

Genista radiata.

A curious and distinct plant with thin, little branches which grow horizontally from the main stems. Seldom more than two feet in height.

Leaves thin, narrow, spiky, opposite. The bark of the old wood has a yellowish colour.

Flowers yellow in small terminal clusters about the middle of June.

Genista sagittalis.

An attractive little Broom, which is evergreen and forms large spreading masses, seldom more than 12 ins. in height, with curious flat, angular-winged stems almost devoid of leaves.

Flowers produced in June, deep yellow, in terminal clusters.

Quite hardy and grows in any soil, increased by cuttings or seed. A useful plant for covering the ground in front of a border or shrubbery.

Genista tinctoria (Dyers' Greenweed).

A quaint little native species, seldom more than 1 ft. or 1½ ft. in height.

Leaves small, pointed, dark green.

Flowers yellow, produced in July in terminal racemes on the young wood.

Easily propagated by seeds or cuttings in late summer. A good plant for the edge of a dry border or rockery. This plant was in olden times used as a yellow dye.

There is a showy double variety with yellow flowers, thickly packed in racemes 3 ins. to 4 ins. in length.

Genista tinctoria var. *mantica*.

A much more robustly-growing plant than *G. tinctoria*, reaching 4ft. to 6ft.

Leaves simple, pointed, alternate, the stems ribbed.

Flowers deep yellow with a greenish shade, in closely-packed terminal racemes on the current season's wood, the shoots being sometimes as much as 18ins. in length, the last nine inches being clothed in blossom in July.

The lateness of flowering adds to its value as a garden plant, but it is not so showy as many varieties.

Genista virgata.

A fine, late Broom, very closely allied with *G. cinerea*, but more woody in growth as the plant gets older.

Leaves small, pointed, simple, grey-green, silvery on the under side.

Flowers clear yellow, in short racemes springing from the previous season's growths, often extending for a foot or more along the slender stalks in early June.

The flowers are slightly fragrant. A fortnight later than *G. cinerea*, it makes a good garden shrub, and is seen at its best at Kew, where it is twelve feet in height. It grows and seeds freely. It is a native of Madeira.

Spartium junceum (syn. *Genista juncea*), (Spanish Broom).

A fine, late Broom attaining 15ft. in height, with long, spiky, rush-like growth, but apt to become straggly with age.

Leaves dark green, simple and not very noticeable.

Flowers very large, the standard being 1in. high and equally broad ; brilliant yellow in colour and produced



Spartium junceum.

on long, smooth shoots of the young wood and arranged singly on short stalks ; fragrant, with a laburnum-like scent.

This Broom is absolutely hardy and can be easily raised from seed. It grows equally well on almost any soil. It generally begins to flower early in July and continues for a long period. To be seen at its best, it should be planted where there is a dark background of evergreens. Owing to its loose growth it is well to cut back the stems immediately the flowers are over.

Since this Broom flowers at a time when most flowering shrubs are over, it is difficult to overrate it as a plant either for the border or for the wild garden.

A native of Spain and Southern Europe, it has been in our gardens far more than a century.

Erinacea pungens (Hedgehog Broom).

A beautiful and rare little shrub, of low, spiny growth.

The leaves are few in number and hardly noticeable.

Flowers deep lavender-blue, borne in small clusters two and three together, towards the end of May or early June. The blossoms are a most delicate shade and it is the nearest approach to a blue broom.

A native of Spain and North Africa, it was figured in the " Botanical Magazine " as long ago as 1803, but has never become common in our gardens. It is by no means easy to grow, but is best when planted in a warm corner in well-drained soil. It can sometimes be increased by cuttings, but in nurseries it is generally grafted.

VIII.

PRUNUS (PLUMS)

INCLUDING ALMONDS AND PEACHES.

A LARGE group of spring-flowering shrubs and small trees, to which have now been added, in addition to what were previously known as flowering Plums, all the flowering Cherries, Almonds, and Peaches. These in conjunction with *Pyrus* (Apples) include in their ranks the best spring-flowering shrubs, beautiful not only for their flowers but also in many cases for their foliage. In some, the young growths, are richly tinted, while others assume brilliant autumn colouring.

Prunus, with their cousins the *Pyrus*, are amongst the most effective standard trees for grouping on a lawn, particularly if a dark evergreen background can be arranged for them. In bush form they are excellent in a shrub border. Perhaps the most useful are the forms of *P. cerasifera*, more generally known as the *Pissardii* group, with their bronze or purple foliage and clouds of small white flowers in early April. There is also the newer form *P. cerasifera var. Blireiana* which, in addition to the bronze-coloured leaves, has charming semi-double, pink flowers. Both these are excellent for small gardens, they never become really large trees, giving the effect of a copper Beech but establishing themselves far more quickly, they also stand a fair

amount of exposure. The double-flowered Peach, *P. persica* var. Clara Meyer, is one of the most beautiful of all the flowering shrubs. It requires a sheltered place and will not stand exposed situations where *P. cerasifera* var. *Pissardii* will be found to flourish.

The cultivation is easy, *Prunus* thriving in any ordinary garden soil, though a deep loam suits it best. Propagation is usually by grafting or budding the same as with the flowering Cherries, but some species, *P. triloba* and *P. japonica* in particular, are far better on their own roots and should be increased by layers or cuttings.

Sprays of *Prunus* are also very good for using with cut flowers and last well in water if not cut too young.

The following is a selection of the best and most showy. The flowering Cherries are dealt with separately.

Prunus Amygdalus, syn. *Amygdalus communis* (Almond).

A highly attractive spring-flowering shrub, or tree, sometimes as much as 25ft. in height. It has been popular in our gardens for many centuries on account of its early flowers, often being in full bloom by the middle of March.

Leaves 3ins. to 4ins. long, narrow, pointed, with slightly serrated edges, closely resembling those of its near relative the Peach.

Flowers deep pink, produced on the previous season's wood, generally in pairs.

The fruit is about 2ins. in length, covered with woolly down, enclosing the nut.

Almonds are among the most useful early flowering trees and as they blossom long before the leaves appear they should be given a dark background.

Unlike many spring flowering trees, they withstand frost and cold winds unharmed, when in full bloom. They will flourish in most soils but prefer warm, sandy ground where they can root deeply and will withstand any drought. It is not necessary to give them rich soil, and they can also be grown on chalk. They are not good seaside plants but are invaluable for planting in large towns and will stand a smoky atmosphere. Almonds are considered to be natives of Northern Africa, but have been so much naturalised in Southern Europe since the time of Pliny that it is difficult to say with certainty.

In Folk-lore the Almond was long considered an emblem of hope. As cut flowers it lasts fresh a long time in water if the branch is cut in bud stage.

Almonds can be planted either as standards or bushes. Perhaps the ideal group is a few standards with bushes planted among them.

In nurseries they are propagated by budding on plum-stocks and are one of the few plants which grow better this way than on their own roots.

There are several varieties which only differ slightly from the type. Var. *macrocarpa* is one of the most distinct with larger pale pink blossoms and foliage, but it is doubtful whether it is quite so free flowering.

Prunus Amygdalus var. *praecox*.

A charming, early flowering variety, quite three weeks earlier than the common Almond. This rare



Prunus cerasifera Blireiana.

shrub was shown in perfect condition from Kew on the 10th February, 1925, when it gained a First Class Certificate of the R.H.S., which is the highest award a plant can get.

The flowers are 1 in. to $1\frac{1}{2}$ in. across and vary from rose to blush-white, each on its own stalk.

Prunus cerasifera (Cherry Plum).

A species which is much used in Nurseries for stocks and hedging. It is not so valuable as a garden plant as its bronze varieties.

Prunus cerasifera var. *Blireiana*.

In growth and foliage this is very like *P. pissardii* but the flowers are semi-double and of a delicate peach-pink, in little rosettes on the last season's wood. The young growths are also of a brighter copper, which blend with the pink blossoms delightfully.

A most desirable garden tree or shrub, it is also excellent for a small avenue, having the great advantage of bronze foliage, which is so effective, the whole of the summer, in addition to the flowers in the spring. Grown as a standard it perhaps shows to the best advantage—failing standards bush plants will make a striking group. They require little pruning beyond removing any cross-growths or shortening strong shoots so as to keep the tree shapely.

Prunus cerasifera var. *Moseri*.

Another bronze-leaved variety but not so rich in colour as the others. The flowers are pink, semi-

double, but not of such a taking shade as in *P. Blirieana*.

P. cerasifera var. *nigra*.

A new variety with foliage several shades darker than *P. Pissardii*. The leaves are slightly smaller and of a lustrous warm bronze. The flowers are much the same size as in *P. Pissardii* but are flushed with pink. Owing to its neat, upright habit, this shrub will be largely planted when better known.

P. cerasifera var. *Pissardii*.

A fast-growing shrub or small tree with a good, upright habit, more generally known in nurseries as *P. Pissardii*.

Leaves 2ins. to 2½ins. long, oval, the edges being finely toothed, of a rich bronze-purple on both sides.

Flowers white, small, produced in great profusion in March and April. It occasionally produces red cherry-like fruit.

Owing to its bronze foliage it is in great demand as a garden shrub. Though not particular as to soil, they are best planted in loamy ground but are also quite happy when growing in chalky land.

Prunus Davidiana.

A very early-flowering Chinese shrub. It is inclined to be tender and as the blossoms open in February it should be given a warm, sheltered situation.

Leaves 3ins. to 4ins. long, pointed, slightly toothed.

Flowers pure white, each on a short stalk.

There is also a pretty pink form.

Prunus japonica, syn. *P. sinensis*.

A compact, low bush from China and Japan. As garden shrubs the double varieties are far and away the most desirable and are more often known in Nurseries as *P. sinensis* fl. pl.

Prunus japonica var. *flore roseo pleno*.

A very pretty early-flowering shrub, the blossoms opening in March or early April. To be seen to perfection it should be grown against a wall.

Leaves 2ins. to 4ins. long, narrow, pointed, with serrate edges, pale green in colour. The young wood becomes dark red as the season advances.

Flowers shell-pink, produced abundantly in little rosette-like clusters. After flowering, this species grows vigorously but the branches have a habit of dying back here and there without any apparent cause. This is now attributed to the effect of late spring frosts. Any required pruning should be done immediately after flowering, the thinning out of the old wood encourages good growth for another season's blossom.

There is also a pretty double white form known as *flore albo pleno*. Both the varieties are good for forcing and form most decorative plants when grown in pots and brought into a cool or slightly heated greenhouse early in January. In nurseries it is generally budded on plum-stock which is apt to throw out suckers. Where possible it should be propagated from cuttings or layers.

Prunus Mume.

A dainty shrub or small tree belonging to the Apricot

section. A native of Japan, it has so far been very little cultivated in our gardens.

Leaves 2ins. to 4ins. long, broad, rounded, plum-like, dark glossy green above.

Flowers blush-pink, generally in pairs, freely produced in March on the wood of the previous year. The blossoms are slightly scented.

This species would become a good garden plant but it is apt to be slightly damaged, though rarely killed, by a severe frost. It should, for this reason, be planted in a sheltered position. There are also some very attractive double forms.

Prunus nana, syn. *Amygdalus nana* (Dwarf Almond).

A delightful little dwarf shrub seldom more than 2ft. to 3ft. in height and forming a low-branching bush. It is an old favourite of our gardens and appears in the "Botanical Magazine" as long ago as 1791.

Leaves 2ins. to 3ins. long, narrow, tapering at each end, slightly toothed edges, of bright shining green.

Flowers rosy-pink, somewhat deeper in the bud stage, and borne on the previous season's wood. It seldom produces fruit, which are downy little almonds.

A native of South Russia and a useful little shrub for the rougher parts of a rock garden, or planted in front of other shrubs, where it will flower freely in April with small pink blossoms.

As it sends out under-ground growths freely it can be readily increased by dividing the suckers. In nurseries it is often budded or grafted, but plants on their roots are far preferable. It flourishes in well-drained

soil, in fact, it will thrive in the driest situation but is not happy in cold clay.

P. nana var. *Gessleriana*.

A very handsome form with larger flowers than the type.

Prunus Padus (Bird Cherry).

A vigorous, deciduous tree found in the wild state in parts of Britain and Northern Europe.

Leaves 2ins. to 4ins. long, egg-shaped, toothed edges, dark green above, of a leathery texture.

Flowers creamy-white, borne in long, close racemes, not unlike the flowers of a Portugal Laurel, and slightly scented.

The Bird Cherry is a very useful tree for the rougher shrubberies or wild garden. Flowering from the end of May into June after most of the Cherries and Crabs are over, it is welcome with its showy spikes of blossom. It will thrive in almost any soil.

P. Padus var. *grandiflora*.

A handsome variety, a great advance on the type. The leaves are glaucous on the under side and the flowers are in long racemes, quite double the length of the common form.

Prunus Persica, syn. *Persica vulgaris* ("Peach.")

The common Peach has now been cultivated in this country for many centuries and is probably a native of China. As garden flowering shrubs the double varieties are the most telling. There are many forms of these but the following are among the best.

P. Persica var. *Clara Meyer*.

Leaves 3ins. to 5ins. long, narrow, pointed, the edges very finely toothed, of a bright green.

Flowers bright rosy-pink borne right along the last season's wood.

This is one of the most delightful of the spring-flowering shrubs or small trees, sometimes 15ft. to 20ft. high. It is a most telling shrub when a mass of its double, pink blossoms catch the light in front of some dark evergreens. Peaches should be given a warm, sheltered position and fairly good soil, they like lime and so will thrive on chalk.

P. Persica var. *camelliaeflora*.

A beautiful double, crimson form, except in colour, the flowers are very much like those of *P. Clara Meyer*, but it has not quite such vigorous habit of growth, nor is it so free-flowering. However, the rich colour of the blossoms make it one of the most attractive of spring-flowering shrubs.

P. Persica var. *flore albo pleno*.

A charming white variety, with large semi-double flowers, distinctly larger than those of *P. Clara Meyer*. It is at present little known in our gardens, but its robust habit of growth promises to make it an attractive variety.

Prunus serotina.

A very little known deciduous tree from North America which might well be more generally planted in our gardens.



Prunus persica, *var.* Clara Meyer.

Leaves 3ins. to 4ins. long, tapering to a fine point, the edges finely and regularly toothed, rich dark green above, more like a Portugal laurel in shape than a plum. If a leaf is held up to the light it shows a most beautiful veining.

Flowers white in loose clusters, more often towards the ends of the branches. These are followed by fruits the size of large peas, red at first but black when fully ripe.

A handsome, upright growing tree, most attractive when in flower or in fruit and perfectly hardy.

Prunus spinosa (Blackthorn).

A native shrub of our hedges and waste lands. It is well worth growing for its wealth of small white flowers, which appear in March before the leaves. The bronze-leaved form is a most desirable garden plant.

Prunus spinosa var. *purpurea*.

This forms a close-growing, neat deciduous shrub.

Leaves 1in. to 1½ins. long, pointed, toothed at the edges of a rich copper-purple.

Flowers white, similar to the type and equally freely borne in early spring.

This shrub deserves to be more planted than it is, it has closer and more compact growth than the *Pissardii* group. Cut sprays are excellent for arranging with flowers. (*See illustration*).

Prunus spinosa flore pleno is the most effective of this trio when in flower. An old specimen will look as though laden with snow in favourable seasons.

Prunus triloba var. *fl. pl.*

A delightful early-flowering Chinese shrub. It never becomes very large and like *P. japonica*, stands forcing well.

Leaves 2ins. to 4ins. long, abruptly tapering to a long point, the edges are deeply toothed and the veining is very prominent on the under side.

Flowers salmon-pink, an inch or more in diameter and produced all the way up the stems of the previous season's growth.

This species makes a most excellent wall shrub and soon covers a space ten feet square, giving a profusion of dainty blossom in early April. It is a distinctly better plant than *P. japonica* but has the same habit of a branch here and there occasionally dying back in the spring without any apparent cause, however, it grows so quickly that it soon makes up for the loss.

It should be propagated from cuttings or layered, as worked plants produce suckers of the plum-stock that may become a nuisance when they grow up through other plants.

IX.

FLOWERING CHERRIES.

THIS group includes some of the most delightful of all flowering trees and shrubs, beautiful in spring with masses of white, pink, and cream blossoms and delicate bronzy foliage, and again in October when they assume brilliant autumn colouring.

Unfortunately the names of the different varieties are in hopeless confusion. Even in our Botanical Gardens the nomenclature must not always be relied upon as being correct. The majority of the species and varieties are of Japanese origin and have reached this country identified by their Japanese names, which have satisfied neither the botanists nor the nurserymen, both of whom have bestowed their own names with the result that Cherries are known under at least three names, the Japanese, the botanical, and the trade name.

In the following chapters the author is much indebted to Mr. Collingwood Ingram, who, with his knowledge of Japanese Cherries, has devoted years of careful study to their classification and is now most successfully unravelling many knotty points. It is therefore only proposed to give here a few notes on cultivation and to mention some of the best known garden varieties,

giving, as far as possible, the names under which they are most generally known.

Cherries, like many of the species of *Prunus* and *Pyrus* are seen at their best when grown as standard trees planted in grass and if possible with a dark background of evergreen shrubs. P.s. *Hizakura*, as it is generally called, though *Kanzan* is now the correct Japanese name, is a handsome, upright-growing variety with lovely double, pink flowers and bronze foliage. *P. avium* fl. pl. with double, white flowers forms a good companion, blossoming about the same time. A fortnight later comes P.s. *J. H. Veitch* of the same shade as P.s. *Hizakura* but not of such vigorous, upright growth, for it becomes a flat-headed tree with age. *P. Rhexii* fl. pl. the double *Morello*, is a good late, white variety, flowering at much the same time as P.s. *J. H. Veitch*. One of the earliest to flower is *P. Sargentii* with large double flowers, it is also the most delightful of all in the autumn when the foliage turns a gorgeous crimson. This variety is quickly followed by *P. serrulata* fl. pl., a very free-flowering, robust-growing variety. Among those with single flowers *P. Ojochin* is one of the most showy with its large blush-pink flowers.

PROPAGATION AND TREATMENT OF YOUNG TREES.

In a few cases Flowering Cherries can be rooted from cuttings but this is a slow process and the usual method is by grafting or budding. In spite of much difference of opinion as to stocks, *Prunus Avium*, the common *Gean*, gives the best results. It is a strong, free-rooting



Prunus serrulata "Ojochin." *syn.* Senriko.

plant and varieties grafted or budded on it quickly develop into healthy young trees when planted in suitable ground. To form standard trees the best practice is to bud or graft on stems of the common stock at the height it is desired to form the head. This method will tend to give clean stems which are less likely to gum than if the trees are worked close to the ground-level and grown up. It is important in the first summer after the budding or grafting not to clean the new growth from the stem of the stock until late in the season. In the first instance take away about one-half the new growth entirely and keep the other pinched back as the plant begins to make woody growth. This will prevent the stem gumming and by the autumn the head of the new variety should have grown sufficiently to take the rising sap, and the stem may be cleared in time for the cuts to heal over before the winter.

When trees have been recently planted, it is very necessary to be on the look out early in May and June for the Black Fly which, if neglected, will spread so rapidly that the new leaves quickly become curled and crippled and the growth be spoilt for the season. As soon as the leaves show signs of curling, spray at once with a strong nicotine wash, forcing it well into the under side of the leaves. A second spraying is essential a week later, if the attack is very severe in order to eradicate entirely this troublesome pest. Should it get the upper hand, prune back in autumn any wood that is curled and twisted in growth. If this is neglected the future shape of the tree may be spoilt.

SOIL.

Cherries thrive best in a deep, well-drained loam overlying clay, and yet not so stiff that the roots cannot penetrate freely. Such a soil is found largely in Kent, where the fruiting Cherries are so successfully grown, making large spreading specimens. Trees grown in heavy land form stronger and more vigorous growth, the foliage is also richer in colour than when they are planted on light, sandy soil.

It must not, however, be assumed that it is useless to plant them on light land. Any fair garden soil will grow flowering Cherries. If it is very light, it is wise to select the stronger and more vigorous kinds. Some form of lime should be added and, if possible, well decayed manure.

When once established Cherries very much resent having their roots in any way disturbed or damaged. The ground should only be lightly forked over. If a spade is used and the roots get cut and bruised, the result is usually gumming which is one of the most difficult problems with which the cultivator of these plants has to deal.

LIST OF THE BEST GARDEN FLOWERING CHERRIES.

Prunus serrulata Hizakura, syn. *P. Kanzan*. Large double rose-pink flowers—mid season.

Prunus serrulata Ojochin, syn. *Senriko*. Very large single flowers.

Prunus serrulata rosea pleno. Double pink—early.

Prunus serrulata James H. Veitch, syn. *P. Fugenzo*. Double pink flowers—late.



Prunus spinosa, *var. purpurea*.

Prunus serrulata pendula fl. pl. Oriental Weeping Cherry. Double pink flowers, weeping habit.

Prunus serrulata Ukon, syn. *P. grandiflora*. Creamy white, or sulphur-coloured flowers.

Prunus avium, fl. pl. Double white—early.

Prunus Rhexii, fl. pl. syn. Double Morello. Double white—late.

Prunus Sargentii. Double pink—early.

FLOWERING CHERRIES.

BY COLLINGWOOD INGRAM.

In Japan the cult of the flowering Cherries dates back to a very remote period, and there are old documents existing to shew that some of the double forms have been in cultivation for at least a thousand years. It is not very surprising, therefore, to find that there are now over 130 more or less distinct native varieties known to the horticulturists of that country. Among these may certainly be numbered some of the most beautiful trees of the temperate zone, and to have visited Japan in the spring months, when these cherries are in their full glory, is to have seen one of the floral wonders of the world.

In and around their capital the Japanese have planted no fewer than 50,000 of one kind alone—the Yoshino Cherry. When these are in full flower and their leafless branches are wreathed in pale pink bloom, the Mikado annually proclaims a public holiday and high and low alike throng in their thousands to see the wonderful display. To plant them thus—in long

avenues—as at Koganei, or in groves and thickets, as at Arishiyama, is to produce a very fairyland of beauty. The Americans were quick to appreciate the possibilities of massing these cherries and already the Potomac Avenue at Washington has become famous throughout the Continent : and there is no real reason why we in England should not enjoy similar scenes of enchanting beauty. All but a few of the southernmost forms will thrive in this climate and will flower quite as freely and as well as in their native country. Why then, are they so often neglected in our English parks and gardens ? There can be only one explanation for this apparent indifference—it is, I think, the almost hopeless confusion that still exists with regard to their nomenclature. It is certainly discouraging to receive the same plant, as I have done, under half-a-dozen different names, and none of them the correct one !

The cause of all the trouble may be traced to the Japanese themselves. During the last thirty or forty years, numerous collections of flowering cherries have been imported from Japan, and it seems that the labelling of these plants has always been more fanciful than accurate. Hence, of course, the confusion.

In 1916 Prof. Miyoshi, of Tokyo, and Mr. E. H. Wilson, of the Arnold Arboretum, each published an important work on these cherries and for the first time it has become possible to stabilize their names. For various reasons, I have deemed it advisable to base my identification of these cherries on the descriptions given in Prof. Miyoshi's elaborate monograph entitled "Die Japanischen Bergkirschen"—a fully and beau-

tifully illustrated work antedating that of Wilson by several weeks. Of the 133 varieties referred to by this author, probably not half the number are now growing in England, and of these only a very few are in commerce. Happily, some of the best forms are already obtainable and it is probably only a question of time before our nurserymen turn their attention to the other equally beautiful varieties.

The cultivation of these Cherries presents no difficulties. A rich, open soil and a sunny aspect is, of course, preferable, but given perfect drainage and ample moisture at root they will grow almost anywhere. In view of the fact that their native country has an average rainfall nearly double that of England, this question of moisture is of no little importance, and small, stunted specimens are sure to result if this is denied them.

The use of our native *Prunus Avium* as a stock for these Japanese Cherries has, I think, been unjustly condemned by Wilson. In my opinion, the Gean is not only a satisfactory stock, but actually forms the best root-system for the majority of these trees in our English soil and climate. Most of the varieties will unite very freely with it, either by budding or grafting, and in the end make stronger and more vigorous trees than when worked on imported Japanese stock. Nearly all the spring Cherries (*P. subhirtella* group) are quite easy to propagate from cuttings, and Wilson declares that some of the *P. serrulata* Cherries may also be increased by this means. In a few of the varieties, *Ukon* for example, the boughs are sometimes

inclined to be a little stiff and ungainly which is really the only fault that can be found with these truly delightful trees. This is due to the formation of very few lateral branches in the early and vigorous years of growth. In order to make a well-furnished and shapely tree, I recommend the nipping back of the extreme tips of the strongest shoots in late June or July. The use of the knife for severe winter pruning is to be discouraged, as all forms of *P. serrulata* are very intolerant of such treatment.

The genealogy of most of the Japanese Fancy Cherries is, and will always be, a matter of discussion. Wilson has attempted to classify them according to their supposed affinity to one or the other of the wild species, but this arrangement is, after all, only an arbitrary one, and I prefer Miyoshi's plan of placing the cultivated varieties together under the one heading—*P. serrulata*. It is true that some are quite obviously near descendants of *P. speciosa*, while others just as clearly show affinity to *P. mutabilis*, or perhaps *P. sachalinensis*; but there are also many intermediate forms which one cannot allocate confidently to any one of these wild species. It is admitted therefore that this division between the cultivated and wild cherries of Japan is essentially an artificial one, but at present, this classification seems unavoidable.

All the varieties enumerated in the following list have been grown in this country for some years and are therefore of proved hardiness.

While some are naturally more showy or attractive than their fellows, all are worthy of a place in our

gardens and it would be an invidious task to make a selection. I would like to say, however, a few words, in praise of some of the single forms which have hitherto been almost wholly neglected in this country for their better known, double counterparts. Nothing could be more lovely than a tree of *P. sachalinensis*, when its soft, rosy-pink blossom is seen in clusters amidst the vivid copper-red of the young foliage; or the intense snowy whiteness of the fragrant flowers of *Jonioi*. Yoshino too, is a very vigorous and beautiful Cherry, extremely popular with the Japanese, while the best of the *P. subhirtella* group, on account of their earliness and floriferousness are also very valuable plants.

Although the Eastern varieties are undoubtedly the élite of the genus, no chapter on the ornamental cherries would be complete without reference to our European species. A few of the more striking forms are therefore included. The minor varieties, both of the Japanese and European cherries, and those of no horticultural interest have been omitted from the list, as also have all the members of the subgenus *Padus*.

Prunus serrulata—*Lindley*. Oriental Cherry.

This double-flowered white Cherry, which was probably the first to be introduced into this country from the Orient, is almost certainly of Chinese and not of Japanese origin. Indeed, it is doubtful whether it has even the same parentage as some of the Japanese forms now bearing its name.

The smooth, rather polished appearance of its mature ovate leaves and its low-spreading, rigid boughs

characterise this Cherry. The distinctly double, white flowers are not very large.

Prunus serrulata affinis—*Miyoshi*. Jonioi.

This Cherry might be described as an improved form of Oshima-zakura. The white flowers, although not large, are bigger and rather more fragrant than in the wild variety. They are borne in great profusion and for this reason, also for the tree's rapid growth, it is well worthy of cultivation.

Its Japanese name denotes "Supreme fragrance," a cognomen bestowed upon it on account of its pleasantly perfumed bloom.

Tora-no-o is another white variety akin to the Oshima Cherry. It is characterised by the distinctly reddish-brown colour of the cupula and sepals which form a pleasing setting to the white blossom.

Prunus serrulata var. *albo rosea*—*Wilson*. Shiro-fugen.

This Cherry is one of the latest, its flowers usually appearing in the form of long-stalked, drooping corymbs, when the foliage is already well advanced. Although pink in the bud the large and distinctly double flowers, become pure white with maturity, but turn again to a pinkish tint before the petals fall.

In Shiro-fugen the young unfolding leaves are of a reddish-bronze colour, the earliest to appear being frequently of a somewhat rounded form. These characters, as also its darker branches, distinguish it from Oku-Miyako, another late white-flowered variety of great beauty.

Shiro-fugen is of vigorous habit, with wide-spreading flattened branches.

Prunus serrulata var. *daikoku*—Ingram. Daikoku.

This Cherry was found in a collection of plants imported from Japan over twenty years ago. It is noteworthy for the large size of its purplish-pink flowers, which are densely double and centred with a cluster of small leafy carpels. These appear in the form of a loose, drooping corymb, the peduncle being noticeably thickened and very long.

Daikoku is a very interesting variety with individual flowers often measuring well over two inches in diameter.

Prunus serrulata var. *erecta*—Miyoshi. Ama-no-gawa.

This beautiful variety is characterised by its pronounced fastigiate growth. It is a very floriferous form, bearing dense bouquets of pale pink, slightly fragrant blossom. The flowers are usually single.

Prunus serrulata var. *Fudan Zakura*.

A rare early-flowering Cherry which is one of the serrulata group. It was first flowered in this country in the spring of 1925. The flowers are pure white, produced in clusters from the bare stems and are most attractive. If sprays are cut in the bud stage and brought into the house they quickly develop.

This species should have a great future as a forcing plant. The native name denotes "Continuous Cherry," and evidently refers to the long flowering period.

Prunus serrulata var. *Fugenzo* (Makino). *Prunus serrulata Veitchiana*—Bean. Fugenzo.

As one of the earliest introductions into this country Fugenzo is still one of the best known varieties in English gardens. Veitch's Cherry—as it was formerly called—is a deservedly popular form, for its large, rose-pink flowers are very beautiful. These open rather late in the season—normally about the beginning of May—and the long stalked, drooping corymbs are then often half hidden by the young coppery foliage.

In this form, two leafy carpels are nearly always a conspicuous feature of its double flowers; but this character is by no means peculiar to Fugenzo. The aristate teeth on the leaves, deeply lacinated stipules and intercrossing boughs distinguish Fugenzo at a glance from the equally pink-flowered Kanzan.

This Cherry does not grow into a large tree.

Prunus serrulata var. *Gioiko*—Koidzumi. Gioiko.

This Cherry is still very rare in English gardens, a circumstance no doubt explained by the fact that it is certainly more interesting than beautiful. Its creamy-white flowers are streaked and blurred with greenish marks, while the tips of some of the petals are occasionally tinged with a pinkish stain. It has been found that in young plants a large proportion of the buds never develop into normal flowers, but remain as mere clusters of green sepals.

Prunus serrulata var. *Grandiflora*—A. Wagner. Ukon.

Several forms of the Japanese Cherries have their flowers suffused with a pale sulphury-yellow tinge, and

of these Ukon (sometimes known as *Cerasus luteo-virens*) has the largest flowers and is certainly the best known. Its semi-erect boughs are inclined to be a little stiff and gaunt, but apart from this, it is a very beautifully Cherry, for its fine yellowish-white flowers are borne in great profusion and, when they are seen in contrast with the brown-bronze of the unfolding leaves, they are extremely effective. There is a very closely related sub-form of this Cherry known by the Japanese as Asagi (*P.s. luteoides*).

Prunus serrulata var. *Hokusai*—Ingram. *Cerasus roseo-pleno* of the Trade. Hokusai.

This Cherry is familiar to every lover of trees and shrubs. It has been propagated in Europe for at least half-a-century and is certainly one of the best of the pink-flowered forms in general cultivation. It is of better constitution and more vigorous than either Fugenzo or Siebold's Cherry—which are also well known, and well-tried, favourites in English gardens. Given a suitable site, Hokusai, will make a shapely tree with a broad, flattened crown sometimes measuring 35 or 40 feet across.

The light pink flowers, which are very freely produced on mature trees, are large and semi-double, usually having from seven to twelve petals.

There are several other semi-double pink-flowered varieties very closely related to this form. The Yedo Cherry (*P.s. nobilis*) is one of these, but it may be distinguished by its deeper pink blossom, shorter inflorescence and greater number of petals.

Prunus serrulata var. *Kirin*—*Koidzumi*. Kirin.

This Cherry very closely resembles Kanzan, but ultimately grows into a smaller and broader-crowned tree. It is a little earlier in opening its flowers, these being borne in more compact and shorter-stemmed corymbs. A very beautiful form, quite as fine in both flowers and foliage as the preceding variety. Kirin is sometimes offered under the name of Choskin. Flowering period mid-season.

Prunus serrulata var. *Kojima*—*Ingram*. Kojima.

Kojima is perhaps the most striking and beautiful of all the white varieties. The somewhat companulate flowers are plentiful and hang in long and graceful corymbs among the green foliage; they are large, usually semi-double and of the purest snowy whiteness. The number of petals seems to vary and the flowers are sometimes single, but they usually have an inner ring of petaloid stamens. The earliest leaves are furnished with exceptionally long aristate teeth, which gives them a somewhat singular appearance. This Cherry has, I believe, been imported under the name "Mount-Fuji," but this appellation has been so frequently applied to other varieties, that it is of no distinctive value.

Prunus serrulata var. *Longipes*—*Miyoshi*. Oku-Miyako.

This Cherry derives its varietal name from its remarkably long stalked, drooping corymbs, which sometimes measure over six inches in length. Pale pink in the bud, the large double flowers are pure white when

open. The distinctly frayed margin of the petals, pale brownish-grey branches, and long aristate teeth on the leaves, immediately distinguish this Cherry from Shirofugen, with which it is often confused.

Prunus serrulata var. *Moutan* — *Miyoshi*. Botan - Zakura.

The Japanese name for this variety signifies “ Paeony Cherry,” apparently given on account of the very large size of the flowers, which sometimes measure, in young and vigorous plants, over two inches in diameter. Although pink in the bud, these fade to white when fully open. In many respects this Cherry resembles Ariake, another white variety, remarkable for the large size of its flowers, but usually blossoms several days earlier.

Prunus serrulata var. *Purpurea*—*Miyoshi*. Yae Mura-saki-Zakura.

Although a very effective variety when its boughs are densely crowded with purplish-pink blossom, this Cherry is still virtually unknown in English gardens. The flowers are only semi-double, having usually about seven or eight petals. They are borne in great profusion, being at their best a little before mid-season. In colour, shape and smoothness of its foliage, this Cherry somewhat resembles Kanzan, but it has not the same vigorous habit and only makes a small-sized tree. The buds before opening in the spring become a vivid red colour and are then very striking and effective. It derives its Japanese and specific names from the purplish tone of its rosy-pink flowers.

Prunus serrulata var. *Rosea*—*Wilson*. (Sometimes called Cheal's Weeping or Lidara Nova.) Oriental Weeping Cherry.

This is a very beautiful variety of pronounced weeping habit. The flowers are densely double, and of a deep pink colour. Although not large, they are borne very freely and produce a charming effect. This Cherry is sometimes confused with the Weeping Spring Cherry, *Prunus subhirtella pendula*, a single-flowered plant belonging to a distinct species.

Prunus serrulata var. *Sekiyama*—*Koidzumi*. Hizakura of Commerce. Kanzan.

This Cherry is certainly one of the best forms, for not only is it very hardy, and of extremely vigorous habit, but it is also among the most beautiful. Its double flowers are large and richly coloured, being deep carmine in the bud, and bright rosy-pink when open. Kanzan belongs to a group in which the young leaves are of a lovely copper-red hue when they first unfold in the spring, and in the opinion of the writer it would be almost worth growing for this vernal foliage alone.

It is unfortunate that the name Hizakura, which rightly belongs to another Cherry, should have been so persistently applied to this variety. Ohnanden and Horinji, as formerly used at Kew, also appear to be synonyms for the plant under notice.

The boughs of Kanzan are more or less ascending and the tree does not exhibit the tendency to form a flattened crown so noticeable in many varieties. The

leaves are large, smooth and have relatively short-toothed serrations ; their under surface becomes whiteish or glaucescent with maturity.

The flowering period is a little past mid-season.

Prunus serrulata var. *Sieboldii*—Wittmack.

(Often called Waterer's Cherry.) Siebold's Cherry (Takasago).

This is a very beautiful plant when in flower, but never makes a large tree. The pink blossom is borne in great profusion—even on young specimens. The flowers are semi-double and fairly large. They are characterised by a broader-shaped cupula which has, like the young foliage, a close covering of fine hairs. Several sub-forms of this Cherry are known.

Prunus serrulata var. *Temari*—Koidzumi. Temari.

This is a very beautiful and floriferous variety bearing dense clusters of large apple-like blossom of a rich pink colour, which are mostly, though not invariably, single. The compact, short-stalked form of the corymb appears to be characteristic of this fine variety, which should be represented in every collection.

Prunus serrulata var. *versicolor* — Miyoshi. Yae-Akebono.

This is a very handsome Cherry with large, semi-double rosy-pink flowers. There is a tendency for the colour to be more intense towards the edge of the petals—hence, apparently, the varietal name “versicolor.” This variety, although introduced many years ago, is still unaccountably rare in English gardens.

Shujaku is another charming Cherry of somewhat similar appearance, but has rather smaller flowers of slightly campanulate form.

Prunus avium flore pleno. Double Gean.

This, the double form of our native wild Cherry, is perhaps the finest of all European varieties. It forms a handsome upstanding tree and in the spring is strikingly effective, especially when grouped against a background of dark pines. Its double flowers, of dazzling whiteness, are more persistent than those of any of the single forms.

Prunus conradinae.

A pink-flowered Chinese species of great beauty and one that should be included in every collection.

Prunus cerasus flore pleno, syn. *P. Cerasus Rhexii*.

Double Morello.

Although this does not make such a stately tree as the double gean, yet when its rounded crown of twiggy boughs is covered with densely double white flowers, it is scarcely less beautiful. The All Saints' Cherry (*P. acida semperflorens*) is a remarkable variety characterised by its successive crops of flowers. Towards the end of the season it is a common occurrence to see it in fruit and flower at the same time.

Prunus mahaleb—*Linnaeus*. St. Lucie Cherry.

[[This native of south and central Europe has relatively insignificant flowers, but the racemes are borne on mature trees in such profusion that the quantity more than compensates for the lack of size. Several varie-

ties of the St. Lucie Cherry are known and of these the weeping form, *var. pendula*, is perhaps the best.

Prunus mutabilis var. *Stricta*—*Miyoshi*. Hupeh Cherry.

This Cherry was introduced into this country from seeds collected by Wilson as long ago as 1900. Despite its beauty it still remains very rare in English gardens. In the bright copper-red colour of its young leaves and the delicate rose-pink hue of its flowers, this Cherry resembles *P. sachalinensis*, but differs in the narrower form of its leaves and peduncled inflorescence.

Prunus pilosiusculus var. *Media*. Bearded Cherry.

This Chinese Cherry with its little star-like, pink-streaked flowers and bristling stamens, is a very attractive and distinct variety. The form *P. p.* var. *barbata* is a pleasing plant, but of less interest.

Prunus sachalinensis—*Fr. Schmitt*. syn. *P. Sargentii*.

Sargent's Cherry.

No horticultural variety is more lovely than this wildling from Northern Japan. Indeed it would be difficult to imagine anything more beautiful than one of these trees covered with delicate rose-pink blossom intermingled with the vivid copper-red of the young foliage. In its native country it is said to grow into a fine timber tree, 60 feet or 70 feet high, but it is doubtful if it will ever attain this stature in England.

Its rich autumn colouring is a further recommendation. This Cherry is perfectly hardy, but will not thrive in a dry, sandy soil.

Prunus speciosa—Koidzumi. *P. Lannesiana albida*—Wilson. Oshima-Zakura.

This is apparently the parent of many of the fancy white varieties. The selected forms are, of course, more ornamental, but none of these are quite so vigorous, or make such rapid growth as the typical Oshima Cherry. The flowers are white and faintly fragrant and, although not individually large, make a fine show when crowded on the boughs of a mature tree. In young specimens it does not flower very freely.

Prunus subhirtella.

An attractive group of diminutive trees of which there are at least five more or less distinct varieties. Of these the autumn flowering form, *Prunus s. autumnalis*, is perhaps the most interesting for it blooms in late autumn or early winter as well as in the spring, but the most beautiful are undoubtedly Beni-Higan (*P. s. rosea*) and Shiro-Shidare, usually called the weeping rosebud Cherry (*P. s. pendula*). Both of these have abundant pale pink blossom in the early spring. *Usi-beni-higan* (*P. s. albo-rubescens*) is a more bushy plant, but is remarkably free with its dainty white blossom.

The Pigmy Cherry (*Prunus incisa*) is another small-flowered Japanese species of great charm. It is unfortunate that it is still so rare in collections, for it is very hardy and an altogether delightful plant.

Prunus yedoensis—Matsumura. Yoshino.

Among the Japanese this is apparently the most popular of all the Cherries. Vast numbers have been



Prunus subhirtella Autumnalis.

planted in and around Tokyo where it is very extensively used for avenues. Indeed, it would be difficult to conceive a more beautiful tree for this purpose and it is truly amazing that it should hitherto have been almost entirely neglected in this country. It has many virtues, being of rapid and vigorous growth, perfectly hardy, and an altogether delightful object when every branch is decked in pale-pink blossom. This Cherry is probably of hybrid origin, its general appearance suggesting *P. speciosa* and *P. subhirtella* var. *rosea* as possible parents. The single flowers are of a delicate pink hue when they first open, but before the petals fall the centres, including the filaments, become stained with a darker purplish-pink, which gives the blossom an added beauty. Yoshino is an early and very floriferous variety.

X.

PYRACANTHA.

THE *Pyracanthas* form a small but interesting group of shrubs closely allied to the *Crataegus*, of which the Hawthorn is the most common species. They are all evergreen and spiny, beautiful in early summer when laden with their snowy-white blossoms, but still more attractive in late autumn and winter when every branch is thickly set with innumerable yellow, orange, or scarlet berries. Four or five species and several varieties are now in cultivation, most of these being of comparatively recent introduction to this country. *P. coccinea*, sometimes known as *Crataegus Pyracantha* or Firethorn, and its beautiful variety *Lalandi* are the best known garden plants. *P. Gibbsii* and *P. Rogersiana* are the most interesting of the newer varieties. They are equally handsome when grown as shrubs in the open or trained against a wall. In the northern and colder districts it is more usual to give them some shelter but in the south they seem quite hardy in the open and are seen at their best in a shrub border.

PROPAGATION.

Propagation is easily effected by means of seeds and the time of sowing is immaterial. A convenient method is to sow the seeds in pots in the autumn or during the

early months of the year, and grow the seedlings under glass until they are large enough to plant out. The young plants grow freely and should be put into their permanent quarters while still small. Old plants do not, as a rule, transplant well. It is safest therefore, to keep the young plants plunged in pots until they can be finally planted out.

Seedlings of some species show variation in the shape of the leaves and in the colour and size of the fruits, but if it is desired to increase the stock of any particular form, this may easily be done by layering the growths, or by taking cuttings of partly ripened shoots at the end of the summer.

Some of the *Pyracanthas* are liable to be attacked by the fungus *Fusicladium*, which causes a disfigurement of the leaves and berries similar in appearance to the common scab of Apples. The disease may be checked by spraying with Bordeaux Mixture in early spring as the buds burst, and again soon after flowering. All fallen leaves should be swept up in the autumn and burnt.

Pyracantha angustifolia, syn. *Cotoneaster angustifolia*.

A beautiful evergreen shrub nearly allied to the *Cotoneasters*.

The leaves vary considerably in size, those on the stronger shoots being 2 ins. long, and on the small lateral growths barely half-inch, of a rich green on the upper side, pale grey and downy on the under side. Most of the branchlets terminate in a sharp spine.

Flowers white, in clusters along the stems in June,

but not so conspicuous as in some species, followed by rich yellow berries, which remain on the plant till the following spring.

A native of Western China, it is quite one of the best of all the berried shrubs. It seems perfectly hardy in the East of England but requires protection in the colder districts and thrives in almost any soil.

Pyracantha coccinea, syn. *Crataegus Pyracantha*.

A close-growing evergreen shrub reaching a height of about 10ft. when planted in the open border, but capable of making a much larger plant when it is grown against a wall. When established it grows vigorously, sending out in all directions young downy shoots, well furnished with foliage and small thorns.

The leaves are 2ins. long on the strongest shoots but considerably less on the flowering shoots. The upper surface is a dark glossy green, the lower of a paler shade. The leaf-margins are bluntly toothed.

Flowers white, small, borne in flattish clusters at the ends of leafy lateral twigs an inch or two in length. The berries are small, and being of a bright coral-red colour, are very conspicuous. Unfortunately they are soon taken by birds unless the bushes are protected. *P. coccinea* is a native of Southern Europe, and has been in cultivation in this country for some three hundred years.

Pyracantha coccinea var. *Lalandii*.

A handsome variety with larger berries, produced much more freely than is the case with the type. It

has a good, upright habit and is quite one of the best of the berried garden climbers, it also forms a most attractive shrub when planted in the open.

There is also a rather rare white-fruited variety but it is not of much value as a garden plant.

Pyracantha crenulata.

A Himalayan plant closely related to the European *P. coccinea*. It forms a large thorny bush with leaves similar to those of *P. coccinea*, and smaller berries of a yellowish colour, but it is much more tender and of little use as a garden plant.

Pyracantha Gibbsii.

An evergreen shrub of erect vigorous growth, soon reaching a height of about 10ft. The smooth greyish-brown branches are wide spreading. The young shoots are almost spineless.

The leaves are larger than those of *P. coccinea*, rather broadly oblanceolate, tapering at the base to a very short stalk. The margins are toothed in the upper half. This species flowers and fruits with the greatest freedom, the berries ripening in October and lasting until January. Seedlings show much variation in the shape of foliage, in the colour of the berries, and also in the time at which the berries ripen. Good forms are among the most ornamental of berried shrubs.

This handsome shrub is a native of China and is of the easiest possible cultivation and thrives best in a light, loamy soil. To obtain the best effect the branches should be thinned out in the early spring.

Pyracantha Gibbsii var. *yunnanensis*.

A vigorous growing variety closely resembling *P. Gibbsii*. The branches, however, appear to be more horizontal and it is of somewhat stronger habit. It flowers profusely in June and is one of the most attractive autumn shrubs when each branch is thickly lined with brilliant berries.

Pyracantha Rogersiana, syn. *P. crenulata* var. *Rogersiana*.

This delightful berried shrub forms a shapely bush with spreading, spiny branches. The growths are downy in the young state, becoming smooth later and often assuming a yellowish-brown tint.

Leaves 1 in. to 1½ ins. in length, dark shining green on the upper side and dull beneath, with irregularly toothed margins.

Flowers white, produced in showy clusters along each branch in early summer. These are followed by a profusion of orange-scarlet berries.

This is one of the most effective of the group and forms a beautiful garden shrub. Its special merit is that it begins to fruit while quite small.

Pyracantha Rogersiana var. *forma aurantiaca*.

A yellow-fruited form.

XI.

PYRUS. FLOWERING CRABS.

THESE and the large group of *Prunus* include many of the most charming of spring trees. They have not quite the same variations of foliage as the Plums but have one great advantage, they are not only beautiful when in blossom but many carry most ornamental and richly-coloured fruit in the autumn which is of course absent with the flowering Cherries and most *Prunus*.

Most of the Crab family form graceful garden trees of medium size, some having an upright growth, others quite a pendulous habit. Unfortunately some species are badly affected by scab, particularly when growing near the coast. The majority are quite hardy and require no particular cultivation, thriving best in a good loam and full sunshine. They are inclined to become stunted when planted in dry, sandy soil.

Prunus and *Pyrus* are both liable to be attacked by Green Fly, particularly in early summer. Directly there is any indication of these insects the trees should be sprayed with Kattakilla or any good insecticide. If this is neglected the whole of the season's young growths may be crippled and the flowers for the following season injured.

In nurseries the *Pyrus* are generally propagated by budding and grafting on stocks that do not as a rule

cause trouble by suckers. Some species can be easily grown from seed, but they seldom come true.

The following descriptions deal with the Crab section of *Pyrus* and only include those which have proved really good garden plants.

Pyrus aldenhamensis, syn. *P. Malus* var. *aldenhamensis*.

A handsome dark-leaved variety, raised at Aldenham House, closely resembling *P. Eleyi* but ten days later in flowering. The foliage is not so bright a bronze and the flowers are a slightly darker shade, the fruits, which are the colour and size of ripe Morello Cherries, also lack the brilliancy of *P. Eleyi*.

It is, however, very robust in growth and its lateness in flowering makes it a valuable garden plant.

Pyrus arnoldiana, syn. *P. Malus arnoldiana*.

Another most effective Crab of garden origin, the result of a cross between *P. floribunda* and *P. baccata*. It is not one of the strongest growers but forms a graceful branching tree or shrub.

Leaves 3ins. to 4ins. long, narrow, pointed, with evenly toothed-edges, of a dark full green, the young wood turning red in late summer.

Flowers, deep rose-pink buds, opening into pale pink blossoms in clusters of four to six with red stalks and calyx, slightly fragrant.

The fruits are yellow, flushed with red on the sunny side, and of a curious barrel shape, small, $\frac{1}{2}$ in. to $\frac{3}{4}$ in. in length, with a scab at the eye.

Like many of the Crabs it is most beautiful in the early stages of flowering before the blossoms are fully



Pyrus Eleyi, in fruit.

open, the dark buds contrasting with the expanded blooms. It is free-flowering, easy to grow and deserves to be widely planted—mid-season to late.

Pyrus baccata. Siberian Crab.

This handsome species has been long cultivated in this country and it forms a larger tree than most of the group. It is a beautiful object when covered with masses of white blossom in the spring, or crowded with brilliant scarlet fruit in the autumn and early winter.

In the wild state it is widely distributed, being found in Siberia, China, Japan, and in the Himalayas.

Leaves 2ins. to 4ins. long, finely toothed, pointed at the tips, each leaf is borne on a long thin stalk.

Flowers white, pink in the bud, in clusters, each bloom being $1\frac{1}{2}$ ins. across. Beautiful in blossom, the real charm of the Siberian Crab is the bright red and yellow fruit in the autumn. Each little apple is the size of a good cherry and is borne on a thin stalk 1in. to $1\frac{1}{4}$ ins. long.

This species is nearly related to *P. prunifolia* but is easily distinguished by the flat top to the fruit and the deeply recessed eye forming a cavity. In the case of *P. prunifolia* the eye is protruding. The fruit of the Siberian Crab is excellent for jelly.

Pyrus Eleyi.

This is quite the finest of all the Crabs. Raised by Mr. Charles Eley in his garden at East Bergholt, Suffolk, from a cross between *P. Niedzwetzkyana* (seed bearer) and *P. spectabilis*, and as a garden plant it is far superior to either parent.

Leaves $2\frac{1}{2}$ ins. to 4 ins. long and half as much in width, oval, pointed, toothed at the edges. The young foliage in the spring is first a brilliant copper, turning to a deep purplish-green as the summer advances. The prominent mid-rib and leaf-stalk are crimson-red, giving the under side of the leaves a purple hue when blown by the wind.

Flowers wine-red, in clusters, borne in great profusion in April and May. These are followed in autumn with rich, red cherry-like fruits, which hang in clusters along the branches and are equally beautiful as the flowers in spring.

Pyrus Eleyi received the Award of Merit from the R.H.S. when in flower in May and the F.C.C. when in fruit in the autumn. This alone speaks volumes for a new hybrid. Growing in Mr. Eley's garden it forms a graceful, compact tree of medium size which is a picture in the spring with a wealth of large red blossoms.

Pyrus floribunda, syn. *P. malus floribunda*.

One of the best known of the spring-flowering *Pyrus*, forming a large, low, branching tree or bush. It blossoms most profusely so that it is a perfect cloud of flowers in April.

Leaves 2 ins. to 4 ins. long, rounded at the base, pointed at the tips, evenly serrated edge, a dark rich green above, paler beneath, occasionally leaves are found with three lobes.

Flowers deep rose in the bud stage, expanding to almost white, and, like many others of this group, they are most charming before all the blossoms are fully

open when red buds and blush-white flowers are intermingled. The fruits are small, bright yellow, the size of a large garden pea, inclined to be conical, borne on thread-like stalks.

A native of Japan, it is said to be a hybrid between *P. Toringo* and *P. baccata*. Its freedom in flowering places it amongst the best garden plants.

Pyrus floribunda var. *atrosanguinea*.

A delightful variety of a distinct pendulous habit.

The leaves are larger than in *P. floribunda* and are generally three-lobed, of a rich lustrous green.

The flowers are much richer in colour both in the bud and when fully expanded. For planting near the entrance to a rock garden, or on grass it is most desirable and seldom fails to produce a wealth of blossom each spring.

Pyrus Halliana, syn. *P. Parkmanii*.

A delightful Crab said to be from Western China, in growth it forms a small graceful tree, seldom more than 15ft. high.

Leaves 2ins. to 3ins. long, rounded at the base, and tapering to a fine point, with toothed edges, bright green on the upper surface, paler beneath with redish veins. The young foliage is often a bronzy shade particularly on the later shoots.

Flowers salmon-pink without a trace of blue so often apparent in this section. The fruit is small, round, of a bright yellow, flushed with red and very showy. This very attractive *Pyrus* is an excellent plant for a

small garden where, given full sunshine, it will flower freely but is later than the majority in coming into blossom.

In spring, when crowded with soft, pink blossoms it is one of the most distinct of this group.

A good loamy soil suits it best but any fair garden ground will grow it quite well.

Pyrus ioensis.

A handsome species from the United States, at present little planted in this country. It is the latest Crab to flower and is generally at its best the last week in May or early June.

Leaves 3ins. to 5ins. long, narrow, the margin deeply and irregularly toothed. Rich green above, downy on the under side.

Flowers shell-pink, globular buds in clusters of three or four, turning to blush-pink when fully expanded, each blossom being 2ins. across, with a distinct violet scent. The fruits are yellowish-green, round, with white spots, about one inch in diameter, borne on stiff stalks.

Unfortunately this species is not one of the easiest to grow and lacks the robust constitution of *P. Eleyi*, and the more vigorous varieties. It requires rich, loamy soil and a warm, sheltered position. However, *P. ioensis* well repays for any special attention as it is one of the most distinct and attractive of all the crabs.

P. ioensis fl. pl.

Is a beautiful semi-double form and equally fragrant.

Pyrus Niedzwetzkyana syn. *P. Malus Niedzwetzkyana*.

A vigorous-growing Crab the first of those with dark-coloured flowers and leaves to be brought to this country. It is more interesting as being the parent of many of the most beautiful kinds, and is now surpassed both in freedom of flowering and fruit by such sorts as *P. Eleyi* and *P. purpurea*.

Leaves 3ins. to 4ins. long, tapering to a fine point, toothed margins, dark purplish-green with red veins on the under side.

It is not free-flowering and therefore is not of much value as a garden plant.

Pyrus prunifolia.

This and *P. baccata* were two of the first Crabs introduced into this country about the middle of the eighteenth century. It is a species well worth growing both for the blossom and handsome fruit.

Leaves $2\frac{1}{2}$ ins. to $3\frac{1}{2}$ ins. long, ovate, irregular serrate edges, a full, rich green on the upper side, slightly downy on the under side. The young growths are distinctly woolly.

Flowers blush-white, in clusters during April and May, followed by bunches of bright yellow and red fruit.

A native of Siberia and China. The variety known as *coccinea* has brilliant-red little apples and is more showy as a garden tree.

Pyrus purpurea, syn. *P. Malus* var. *floribunda purpurea*.

An attractive spring-flowering small tree with a graceful, slightly drooping habit.

Leaves 2ins. to 3ins. long, pointed, of dark shining

green. The young growths are a distinct bronze shade, deep rose tinged with purple in the spring.

Flowers in clusters along each branch, produced in such profusion that the whole is a cloud of blossom. This is succeeded in the autumn by masses of small deep-red fruit.

Either in the spring when in full blossom or loaded with berries in October it is equally delightful as a garden plant. Flowering a week before *P. Eleyi*.

Pyrus Ringo.

A fairly strong-growing Crab, first introduced from Japan some sixty years ago. It is doubtful whether it is the true wild species, and is more likely to be a hybrid, of which *P. spectabilis* was one of the parents.

Leaves 2 ins. to 3 ins. long, oval, pointed, full green above, paler beneath, with finely-toothed edges. The young growths are woolly, becoming more or less glabrous as they age.

Flowers blush-white when fully expanded, the unopened buds are deep rose.

This *Pyrus* is most attractive when laden with bright yellow, egg-shaped fruit, which are very freely produced. It is not a variety that has been largely planted in our gardens and is not so showy as many of the newer *Pyrus*, but few are more delightful in the early autumn, when heavily laden with little golden apples.

Pyrus Sargentii.

A very dainty and charming species, a native of Japan, which forms a small, neat tree. It is most telling when grown as a short standard.

Leaves 2ins. to 2½ins. long with three deeply-cut lobes, each tapering to a point, dark green on the upper surface, paler beneath.

Flowers pure white in clusters along somewhat horizontal branches. It is perhaps at its best just before the blossoms open, when each branch is clothed with clusters of dainty little pink buds which open white. It is later in flowering than the floribunda section, often lasting until the third week in May. The flowers are followed in September by fascinating brilliant crimson fruit about the size of a garden pea, flat tops. Each dainty fruit is borne on a slender red stalk an inch in length in clusters of three to eight. The foliage turns a rich golden-brown before falling.

This species should be more generally planted, its foliage and bright fruits are distinct from the better-known Crabs.

Pyrus Scheideckeri, syn. *P. Malus* var. *Scheideckeri*.

An attractive, profuse flowering Crab, forming, with age, a very handsome tree, which, during April and early May, is a wealth of blossom. It is a hybrid between *P. prunifolia* and *P. floribunda*.

Leaves 2½ins. to 3½ins. long, broad, finely pointed at the top, the edges coarsely toothed, rich shining green. The young growths are distinctly downy.

Flowers, deep rose-coloured buds, blush-pink when fully open. The fruit is yellow, round, about the size of a cherry.

It is not a good grower in the young state and requires good soil but once established it grows away

freely. The abundance of blossom makes it an excellent garden specimen. It is seen to perfection at Kew in April, where there are some well-grown trees.

Pyrus spectabilis.

A strong growing, handsome species, forming quite a good-sized tree. It seems to be one of the oldest Crabs in cultivation, and is figured in the " Botanical Magazine " as far back as 1794 and was known as the Chinese Apple. It is also a parent of many of the most beautiful of the newer varieties.

Leaves 2ins. to 4ins. long, finely pointed, of a leathery texture and dark full-green on the upper side.

Flowers semi-double, pale pink, with large deep-rose globular buds. The fruit are round, yellow, slightly red on the sunny side, but not so abundantly produced as is the case in some species.

This old favourite is still one of our handsomest spring-flowering trees. Quite hardy, it forms a good specimen tree. Its worst enemy is scab and if any signs of this are seen the tree should be sprayed during the winter with Bordeaux mixture.

Pyrus spectabilis var. *Kaido*.

A promising variety with large parti-coloured flowers and good habit, when more generally known it will become very popular.

List of the ten best garden, spring-flowering *Pyrus* :—

- P. aldenhamensis*.
- P. arnoldiana*.
- P. Eleyi*.
- P. floribunda*.
- P. floribunda* *var.* *atrosanguinea*.
- P. Halliana*.
- P. prunifolia*.
- P. purpurea*.
- P. Sargentii*.
- P. spectabilis*.

XII.

VIBURNUMS.

THE Viburnums include a number of deciduous and evergreen species differing widely in size and habit of growth, the two extremes being represented by the Black Haw, *V. prunifolium*, a small tree, and the dwarf Guelder Rose, *V. opulus* *var.* *nanum* which rarely exceeds eighteen inches in height. Most of the species will be found in full bloom in the early summer, but *V. Tinus* and *V. fragrans* flower from October to April. In addition to the attraction of the flowers many of the species assume brilliant autumn colouring, the common Guelder Rose, *V. opulus* being one of the best. Amongst the Viburnums will be found some of the most beautiful flowering shrubs, *e.g.* the sweetly-scented *V. Carlesii* and *V. tomentosum* *var.* *plicatum*, the Japanese Guelder Rose with its large white rosettes.

Botanically the Viburnums are interesting as possessing two distinct types of flowers, the one sterile and showy for the attraction of insects and the other fully fertile and often inconspicuous. In recent years many new varieties have been received into this country from China, Japan, and Northern India.

The fruit or berries of many species are brightly coloured, but turning almost black when quite ripe.

V. Davidii is an exception for it bears blue berries as bright as a turquoise.

Viburnums are among the easiest shrubs to grow, most of them enjoy moist ground and some require partial shade. They are not fastidious as to soil, but will thrive in almost any garden ground, although a deep, rich loam well broken up and manured is the ideal soil for them. It is quite true that *V. Carlesii*, *V. propinquum* and *V. Tinus* are quite at home in light, sandy ground but in their native countries collectors often speak of finding them growing near streams or or in swampy woodlands, evidence which tends to show that they are moisture-loving plants.

Most Guelder Roses are especially good plants for a chalk soil and nowhere is the common Wayfaring Tree, *V. Lantana*, happier than in the chalky hedgerows of Surrey and Kent. Nearly all the Viburnums are useful garden shrubs, the majority being quite hardy, though some of the evergreen kinds, with their handsome leaves are best if planted where they are to some extent sheltered from the full force of the wind and severe frost. Most are compact in growth and can be effectively used as single specimens in grass, or several together in a bed. They are excellent for intermingling with plants in front of a shrubbery or in a border devoted to flowering shrubs, three or five planted together giving the best results. Several kinds are now to be had as low standards, particularly the Snowball Tree (*V. Opulus* *var. sterile*), which makes an attractive little tree.

The best times for transplanting Viburnums are the

same as those for most shrubs, that is, for the evergreen species early autumn or spring, and for the deciduous species November and December, and, failing these months, the Spring. Mid-winter should be avoided in both cases, but particularly in dealing with evergreens.

There are many ways of propagating *Viburnums*. They are easily increased by cuttings and this is perhaps the best way, but layering is also a simple plan. Cuttings made of half-ripe wood in July and August root freely under a hand-light or cloche. The dainty *V. Carlesii* is slow to make much growth, and is often grafted on to a free-growing stock like *V. Lantana*, so that in dealing with grafted specimens, a careful watch must be kept for suckers.

Seeds sown in a cold frame or greenhouse in spring germinate readily, but it is some years before the seedlings grow into good flowering specimens. However, plants raised from seed make good shrubs in the long run.

There is a vast number of species of *Viburnums*, but the following are perhaps the best known and the most useful garden kinds.

Viburnum alnifolium.

This North American species does not take kindly to our climate. It should be given shade and moisture ; even then it does not always thrive. A tall deciduous bush up to 10 ft. high, with large rounded leaves, white flowers in early June, and red, finally purple-black fruit. It is rare in gardens, but is well worth a trial for the rich crimson-red of the autumn foliage.

Viburnum betulifolium.

One of Wilson's introductions from China, forming a large, free-growing bush, often 10ft. in height.

Leaves 3ins. to 4ins. long, pointed, coarsely toothed, quite smooth on both sides, bright glossy green on the upper surface, paler beneath, with prominent veins. As its name implies the leaves closely resemble the common Birch.

The large corymbs of white blossom in June are followed by shining red fruits.

A good garden shrub and especially effective in autumn.

Viburnum bitchuiense.

A vigorous-growing, deciduous species from Japan. In many ways it resembles *V. Carlesii* and was much confused with that variety when it was first sent over. This species is, however, quite distinct, being more rapid in growth and of much more upright habit. The flowers, which are pale pink to white, are in smaller, more loosely arranged corymbs, and not so fragrant. Although not as good as *V. Carlesii*, it will become a good garden shrub and is well worth a place for its pink blossom in April and May.

It roots easily from cuttings, of half-ripe wood in early autumn.

Viburnum buddleifolium.

A free-growing shrub 6ft. to 8ft. high. It was first found by Wilson in China about 1900, and belongs to the *Lantana* section.

Leaves 4ins. to 6ins. long, narrow, pointed, of a rich deep green, downy and quite soft to the touch on the upper side, silvery-grey beneath.

Flowers white, in branching cymes, produced in May and June. The fruit is quite black.

An interesting species rather by reason of its beautiful foliage than for its flowers.

Viburnum burejaeticum.

A rare species found in China, growing about 6ft. high with large leaves and white flowers produced towards the end of May in small cymes 2ins. in diameter and followed by black fruit.

Viburnum Carlesii.

A delightful, spring-flowering, deciduous shrub, forming in time a rounded bush 4ft. or 5ft. in height, and as much in diameter. Growing at the foot of a low wall it flowers freely, forming a most effective plant.

Round leaves 2ins. to 4ins. long, with toothed edges, of a full green, but paler on the under side.

Flowers white, in clusters of wax-like blossoms intermingled before they are fully developed with dainty pink buds, changing to white as they open. Perhaps the charm of the plant is the wonderful scent which resembles carnations and is noticeable for a considerable distance on a fine April evening. The blossoms are produced at the ends of the previous season's growth, and as in many other species of this genus, the flower buds are formed the previous autumn, remaining comparatively dormant through the winter



Viburnum Carlesii.

so that the ardent gardener can tell in November what bloom he may expect the following spring. It is certainly the most beautiful of the Viburnums and should be grown in every garden. Thriving in full sunshine in a light or mixed soil, not too dry, it requires little or no pruning and is perfectly hardy when once established. In nurseries it is often grafted on *V. Lantana* and a careful watch must be kept for suckers, which are sometimes troublesome in the young state, and quickly outgrow the true plant. Cuttings can be rooted in early autumn under a hand-light, and these give the best results.

First found in Corea, it was flowered in this country some twenty years ago.

It can also be propagated from single leaves inserted in sandy soil under a hand-light in June and onwards.

Viburnum cassinoides.

A native of the United States, it revels in a moist situation, but is rarely seen in English gardens.

Leaves thick and dark green in colour.

Flowers pale creamy-yellow in large clusters in June.

The fruit is blue-black when fully ripe. It is known in America as the "Witherod."

Viburnum cinnamomaeifolium.

A new and still rare Chinese species found by Wilson on Mount Omi, and described as a vigorous evergreen shrub, or small tree.

Leaves $2\frac{1}{2}$ ins. to $3\frac{1}{2}$ ins. long, tapering, pointed, slightly toothed, bright shining green on the upper side, paler on the under side with silvery scales and

three prominent veins springing from the base of the leaf. The young wood becomes red as the season advances. It resembles *V. Davidii* though it is much taller.

Flowers creamy-white in July and August.

This species promises to become a useful garden shrub and so far has proved to be hardy.

Viburnum coriaceum, syn. *V. cylindricum*.

An interesting, but little known, evergreen species from China and the Himalayas, growing into a large tree in the wild state.

Leaves 4ins. to 6ins. long, narrow, pointed, with wavy edges. Dull green on the upper side, of which the surface is slightly sticky, and, when rubbed, turns grey. The under side is paler with a prominent midrib. The leaf-stalk and young wood, which turns red in the autumn, are rough to the touch and covered with small brown lenticels.

Flowers white with mauve stamens in wide cymes from July onwards. Fairly hardy, and will become a popular garden plant when better known.

Viburnum dasyanthum.

A new Chinese deciduous species forming a free-growing bush up to 10ft. in height.

Leaves 2ins. to 4ins. long of a dark lustrous green.

Flowers white, in corymbs 3ins. in width, in July.

A showy garden plant when in blossom and again when bearing its berries in autumn. It seems to be related to *V. betulifolium*.

Viburnum Davidii.

A low-growing, evergreen shrub from China, which in favourable conditions of moisture and slight shade, spreads over the ground and forms a thick mass of foliage never more than 2ft. in height.

Leaves 3ins. to 5ins. long and half as wide, oval, pointed, of a dull, deep green, with three prominent nerves, quite smooth on both sides. The leaf-stalks become a rich red in autumn.

Flowers white and uninteresting, produced in early June.

This species is particularly valuable for its clusters of bright, blue berries in the autumn. It does not appear to fruit very freely, possibly because it may be partly self-sterile. If so, a group of several individuals would probably fruit freely.

Viburnum dentatum.

A vigorous deciduous shrub from North America, often 12ft. high.

Leaves 2ins. to 3ins. long, coarsely toothed.

Flowers white, in clusters, followed by small blue-black fruits.

Viburnum dilatatum.

A somewhat rare Japanese deciduous shrub, 8ft. high when fully grown.

Leaves 3ins. to 4ins. long, nearly as much in width, pointed, narrow, toothed, hairy, and bright green.

Flowers creamy white, borne in flat heads in early June; in early autumn it is most attractive with brilliant red fruit.

Viburnum foetidum.

An upright-growing, evergreen shrub, a native of China. At present it is very rare and seems difficult to flower satisfactorily in this country.

Leaves 2ins. long of a deep green, white on the under side.

Flowers white, the sterile blossoms being on the outside.

An interesting species but it is doubtful whether it will become a useful garden plant.

Viburnum fragrans.

A deciduous, winter-flowering shrub of stiff, upright growth.

Leaves 2ins. to 5ins. long, pointed, toothed at the edges, of a bright green, prominently veined on the under side in fish-bone fashion. The young wood turns a reddish-brown in autumn.

Flowers blush-white when fully expanded, the buds being deep pink and borne in clusters, followed in late summer by scarlet fruits, that turn black when fully ripe.

Introduced from China by the late Reginald Farrer in 1914, he describes it fully in the *Journal of the R.H.S.* He tells how at 5,000 to 6,000 feet on April 16th, the flower was passing over, but still lingered on in the small villages enabling him to realize fully the glory of its capacious thyrses of blossom like snow-white or rose-pink Lilac, freely borne on the graceful stately boughs and sprays of 6ft. to 10ft., and exhaling the most entrancing scent of heliotrope.

The flower is prepared in tight buds at the end of each spray by December ; it opens at any time according to the season, from then till April, and is succeeded by the foliage amid which in August hang clusters of glowing, oblong berries of crimson-scarlet, hardly less beautiful in their way than the blossom. The Chinese eat these berries, but this is dangerous as the cloven stones or seed are poisonous.

In this country it seems rather erratic as to the time of flowering, for blossoms may be seen at almost any time from October until the end of March. In Mr. E. A. Bowles' garden it was a wealth of fragrant clusters of blossom in early February, 1922. In 1924 it was flowering on Christmas Day, while many plants were blooming in November. Thriving in damp, loamy soil, in full sun, so that the wood ripens, there is no difficulty in its cultivation. Cuttings of half-ripe wood root readily in a little heat in early autumn. So far as can be gathered it requires little or no pruning. When better known this Viburnum will be in the front rank of winter-flowering plants. Even last Christmas Day (1925) in spite of a month's intermittent frost and snow it was quite possible to gather a bunch of fragrant blossoms.

Viburnum Harryanum.

A small, compact evergreen shrub from Western China, where it was found by Wilson at a high altitude.

Leaves $\frac{1}{2}$ in. to $\frac{3}{4}$ in. long, but varying a good deal in size, rounded, of a dark, dull green, with small red leaf stalks.

Flowers white, in terminal umbels in June and July.

This neat, little plant is useful in the front of a shrub border, but is not so interesting as many of the family. Its name commemorates Sir Harry Veitch, the head of the famous firm which sent collectors to Western China and introduced to this country so many good garden plants.

Viburnum Henryi.

An attractive evergreen shrub of erect habit, 8ft. to 10ft. in height.

Leaves 3ins. to 4ins. long, narrow, of a dark, shining, leathery green.

Flowers white, borne in stiff branching panicles in June, but the greatest beauty of the plant is in autumn when it is covered with large bunches of red fruits, which eventually turn black. Perfectly hardy but suffers when exposed to the full force of the wind in winter.

Viburnum hupehense.

One of Wilson's introductions from the province of Hupeh in China and particularly attractive by reason of its brilliant autumn colouring. A deciduous shrub 6ft. to 8ft. in height.

Leaves $3\frac{1}{2}$ ins. to $4\frac{1}{2}$ ins. long, toothed, rounded, of a somewhat pale green with a prominent vein on the under side.

Flowers white, freely borne in June. When the bushes are showy with red fruits in autumn the foliage assumes shades of bronzy-red and green.

Viburnum japonicum (syn. *macrophyllum*).

A low evergreen shrub, much confused in nurseries with *V. Sieboldii* which is a distinct and deciduous species. The true plant is an evergreen shrub with leaves 2ins. to 5ins. long and varying in shape, not so long and pointed as in *V. odoratissimum*, but of a similar brilliant, shining green though paler on the under side, which is covered with tiny dark spikes.

Flowers white, in cymes often several inches across, in May and June—sweet scented.

This attractive shrub is not hardy, and to see its full beauty it should be given a warm situation and does well against a wall.

Viburnum Lantana. Wayfaring Tree.

A strong-growing, native shrub, plentiful in chalky districts.

Leaves 3ins. to 5ins. in length, rounded, coarsely veined, with finely-toothed edges, of a dark rich green.

Flowers white, in terminal cymes during May and June, followed by clusters of brilliant red fruits which turn black when fully ripe.

This species is largely used as a stock on which to graft the choicer kinds. There are several variegated sorts which are hardly worth cultivating.

Viburnum Lentago.

A vigorous-growing shrub sometimes 20ft. high. A native of North America where it is known as the "Sheepberry."

Leaves 3ins. to 5ins. long, toothed edges and of a rich green.

Flowers creamy-white, borne in broad, flat clusters during early summer, sweet scented. The fruit is red, turning to blue-black when fully ripe, but unfortunately it is very seldom seen except in very hot, dry seasons.

This *Viburnum* is well worth growing and makes a good wall plant.

Viburnum macrocephalum.

An interesting more or less evergreen species which becomes eventually a fair-sized shrub.

The form of this species, which was introduced by Fortune from China some eighty years ago, was obviously a cultivated one, for the flowers are all entirely sterile. The wild form has been introduced recently into cultivation.

Leaves 3ins. to 5ins. long, slightly pointed, with notched edges and of a full green. Stems coated with a coarse down.

Flowers white, in large globular heads, freely produced in May and early June.

Trained against a wall and covered with huge *Hydrangea*-like heads of blossom it forms one of the most striking garden plants in early summer and is perfectly easy to grow. Hardy except in the most severe winters.

Viburnum molle.

A strong-growing North American deciduous shrub.

Leaves 2ins. to 4ins. long, coarsely toothed.

Flowers white, small, produced in early summer and occasionally followed by small blue fruits which mature in the autumn.

The true variety is seldom found in our gardens, but it has a curious peeling bark on the older stems which distinguishes it from the other species which have blue berries.

Viburnum nudum.

A native of the United States, closely resembling *V. cassinoides*.

Leaves 3ins. to 5ins. long, of a dark glossy green, pointed.

Flowers creamy-white, in large heads in June, followed by almost black fruit.

A vigorous, deciduous shrub but of little value as a garden plant when compared with the more showy kinds.

Viburnum odoratissimum, syn. *V. Awafuki*.

A showy evergreen shrub found in China and Japan.

Leaves 5ins. to 7ins. long, pointed at each end, edges bluntly toothed, quite smooth of brilliant, deep, lustrous green.

Flowers white, produced in large pyramidal panicles in June, sweet-scented, followed by red fruit in the autumn.

This most attractive species is not really hardy, except in the south-west. In other parts of the country it should be given a warm, sheltered position where it is well worth growing.

Viburnum Opulus. *Guelder Rose.*

A native deciduous bush or small tree of strong, upright growth.

Leaves 2ins. to 3ins., but varying a good deal in size, toothed like those of a currant, of a rich green.

Flowers white, in flat cymes as much as 4ins. in diameter, in early summer. Later in the year it produces abundant clusters of brilliant red fruit, which, with the charming autumn colouring of the foliage, makes it a most attractive bush.

It may be increased by cuttings which root readily.

Viburnum Opulus var. *nanum*.

A quaint little dwarf form, rarely more than 2ft. high. As it seldom, if ever, flowers, it is of little value as a garden plant.

Viburnum Opulus var. *sterile*. Snowball Tree.

A most interesting and showy variety producing large, round heads of sterile flowers closely packed together. The growth and form is the same as *V. Opulus*, but as all the flowers are sterile it is entirely without the beautiful fruit. Standing alone or grouped with other shrubs, it is a striking bush in June when crowded with its white, snowball-like blooms. Quite hardy, and will flourish in any garden soil, though at its best in a damp, swampy ground.

Viburnum propinquum.

A compact, somewhat dense, evergreen shrub from China.

Leaves 2ins. to 3ins., narrow, pointed, of a shining rich green. The young wood and leaf-stalks taking a crimson colour in the autumn. It is distinguished by its leaves with three prominent nerves which are



Viburnum rhytidophyllum.

only found in two other species of *Viburnum*—*V. Davidii* and *V. cinnamomaeifolium*.

Flowers whitish, produced in early summer ; fruit blue-black.

This useful evergreen will become an attractive winter plant when better known. It is fairly hardy and can easily be increased by cuttings.

Viburnum prunifolium.

This American species is one of the largest of the *Viburnums*, capable of becoming quite a fair-sized tree as much as 25ft. in height.

Leaves 2ins. to 3ins. long, roundish, smooth.

Flowers white, produced in clusters in early summer and followed in autumn by deep blue, edible fruit.

Planted in a moist situation on the bank of a stream or in a wild garden it forms an attractive branching tree.

Viburnum rhytidophyllum.

A distinct and conspicuous evergreen shrub 8ft. to 12ft. in height. It was first found by Wilson in one of his early journeys to China.

Leaves 6ins. to 8ins. long, narrow, of a lustrous dark green, the upper surface being rough and indented, the under side is covered with white flannelly felt with a prominent mid-vein.

Flowers buff-white in large flat heads in early June followed first by red fruit, but these turn black as the autumn advances. Some plants fruit better than others, possibly because some are almost wholly self-sterile. In any case it is well to group several together to insure obtaining fruit.

Although perfectly hardy, this shrub should be planted where it is sheltered by other shrubs in order to obtain the full beauty of the bold foliage in winter, which is the chief attraction of this species.

Viburnum Sargentii.

A Chinese species very closely resembling the European *V. Opulus* but of somewhat stronger growth and apt to be injured by the late spring frosts. As a garden plant, it is not of much value.

Viburnum Sieboldii, syn. *V. reticulatum*.

A robust-growing, deciduous species from Japan forming a broad-spreading shrub.

Leaves large, pointed, and toothed, with very prominent veining.

Flowers white to cream, in flat clusters. The fruit is pinkish-red changing to blue-black when fully ripe.

This is the variety so often confused with the ever-green *V. japonicum*, a much commoner plant.

Viburnum theiferum.

A compact-growing deciduous bush from Central China.

Leaves 3ins. to 5ins. long, pointed, margined with distinct red teeth, dull green on the upper side, greyish beneath.

Flowers white in June with two leaves just over the cluster. The fruits are oval and flat, borne on red stalks 1in. to 2ins. long.

This is quite an interesting shrub but so far has not been grown to any extent in our gardens.

Viburnum Tinus. Laurustinus.

A well-known dense-growing evergreen originally introduced from Southern Europe and forming a large round bush 8ft. to 12ft. in height and as much in diameter.

Leaves 2ins. to 4ins. long, pointed, leathery, of a dull green, and quite smooth, with red petioles (leaf-stalks) and flower stalks.

Flowers white with pinkish buds borne in cymes, and, during a mild winter, occasionally producing blue-black fruit in warm seasons.

One of the kindest of evergreens, blossoming best in a sunny position, yet capable of flowering also in partial shade or near the sea. A light, warm soil suits it best but it will thrive in most gardens. Hardy except in the coldest districts. It can be used with success as a hedging plant, although it must sometimes be clipped at the expense of the blossoms. Cuttings in September root freely under a hand-light, and it is also readily layered.

Viburnum Tinus var. *lucidum*.

A fine, somewhat more loosely-growing shrub. Both the leaves and flowers are larger than the common Laurustinus. Unfortunately it is not so hardy and is apt to be damaged in severe winters, though seldom killed.

Viburnum Tinus var. *variegatum*.

The leaves splashed with yellow, but a poor garden plant and not worth growing.

Viburnum tomentosum.

A flat-growing, deciduous bush 7ft. in height. A native of China and Japan.

Leaves 3ins. to 4ins. long, rounded at the base and pointed at the tips, of a full green with slightly notched edges and prominent veins.

Flowers white, in flat heads, comprising two types, the small, perfect flowers in the centre surrounded by the larger sterile blossoms, produced in June.

Not so hardy as some Viburnums, and somewhat eclipsed by the two following varieties.

Viburnum tomentosum var. *Mariesii*.

A great improvement on the type, the flowers being larger and borne in flat clusters. Blooming rather late, it is a valuable garden shrub. A well-grown plant forms a compact rounded bush. It is apt to be slightly damaged by severe frost and is therefore best grown in a sheltered spot. It resents being very dry.

Viburnum tomentosum var. *plicatum* or *Viburnum plicatum*.

One of the best of all the Viburnums. First introduced by Fortune from China and Japan, where it had been prized for many years.

The flowers are borne all along the stiff horizontal branches in close rosettes of white, sterile blossoms. The foliage turns a most gorgeous colour in autumn. A most attractive garden shrub rarely more than 6ft. in height and once established it is perfectly hardy. Covered with blossoms in early June, it forms a rounded shrub and should be in every garden. Thriving best in



Viburnum plicatum.

a good, rich loam, it can be grown in almost any soil ; it also grows freely on chalk. Cuttings strike fairly well but take sometime to make good plants.

Viburnum utile.

A graceful, erect, evergreen shrub of Chinese origin.

Leaves 2ins. to 3ins. in length, pointed, of a lustrous deep green on the upper side and whitish-grey underneath. The stems are coated with rough down.

Flowers white, in rounded clusters in May, followed by blue-black fruit.

Hardy, but prefers a warm, sheltered place or the protection of a wall.

Viburnum Veitchii.

A robust-growing, deciduous shrub first found by Wilson in Central China.

Leaves 4ins. to 6ins. long, pointed, toothed at the edges and downy on the under side.

Flowers white, in large heads 4ins. to 5ins. across, produced in June—July, and followed by red berries which turn black when fully ripe

It is closely related to V. Lantana, and when better known will become a popular garden shrub.

XIII.

SEASIDE PLANTING.

No section of gardening presents so many difficulties or requires such intimate knowledge of the adaptability of the plants as seaside planting, and yet, when suitable ones are chosen and are planted at the right time, quick results can be obtained with a little care and attention, even on the dry wind-swept cliffs of the east coast.

Most of the writer's experience has been gathered from some thirty years of planting on the east coast from the mouth of the Thames to the Wash. The greatest difficulty is the dry, parching wind generally experienced in spring and early summer, though probably the actual force of the wind is not so great as on the west coast, where the climate is warmer and damper. Much is often attributed to cold which is really due to the sheer force of the wind, which is often saturated with salt. A striking instance of this occurred in July, 1922, when a long spell of drought broke up with a strong southerly gale. Two days later every hedge and tree on the exposed side was scorched and as brown as in mid-November, simply from the force of the salt wind. Near the sea there are seldom very severe frosts and it is surprising how many half-hardy plants or those which require a cool greenhouse

in districts further inland, flourish and flower freely on the coast. *Coronilla glauca* flowers so freely that it is often a mass of yellow blossom from February to July, while inland it is apt to get straggly and to be severely damaged by frost. Many of the *Veronicas* thrive well on the coast, continuing in flower through the autumn and often until Christmas, while inland they would be cut down in any but the mildest winters.

A chapter on seaside planting would not be complete without mentioning some of the Conifers, particularly the fast-growing *Cupressus macrocarpa*, which thrives far better near the sea than inland. Also, among the Pines there are to be found some of the best shelter trees. *Pinus Pinaster* and the Black Austrian are two excellent fast-growing trees for planting as a wind break, that will grow in almost any well-drained soil.

Large-growing deciduous trees which provide a welcome shade are always a problem on the sea coast, and although they hardly come under the title of this book, should not be altogether omitted. It is difficult to induce standard trees to start growing freely. The best of all is the Cornish Elm (*Ulmus stricta*) with its strong, upright growth and small, tough leaves, this is also an ideal tree for planting in streets.

The Lombardy Poplar (*Populus fastigiata*) is another good tree for seaside planting. The Silver Poplar (*Populus alba*) grows rapidly but is untidy and apt to be broken by high winds in summer, but its upright form *P. Bolleana* should do well. The Canadian Poplar (*Populus canadensis*) is another fast growing spreading tree with pale green, rustling leaves. The common

Sycamore (*Acer pseudo platanus*) is also quite a good tree. It is of great importance that the trees should have been recently transplanted, and small rather than large specimens are always preferable, starting into growth quicker and more vigorously. As they invariably have to stand against strong wind careful staking is most essential.

However, the main feature of a seaside garden must be shrubs. They quickly give shelter, remain in good condition over a long period and flower abundantly. Last Christmas (1925) *Veronicas* were much damaged by early frosts inland, while on the coast *V. Andersonii* Purple Queen was still producing its handsome purple spikes. Again in the spring few plants equal *Ribes sanguineum* and its varieties, which give a wealth of deep pink blossom in spite of the coldest winds. Broom, *Tamarix*, *Cistus*, *Buddleia*, etc., follow on in turn. Many coast shrubs have grey foliage and a bold group of these is most telling. Sea Buckthorn, *Atriplex Halimus*, *Eleagnus macrophylla*, *Senecio Greyi*, etc., may all be used.

The Shrubs described hereafter are divided into three groups :—

- 1st. Those that will grow in positions fully exposed to salt winds.
- 2nd. Those shrubs that thrive in exposed places slightly further back from the sea and so do not feel the full force of the wind.
- 3rd. Those shrubs suitable for planting in warm seaside situations where they are sheltered by cliffs, or at the foot of a warm wall.

These various groups naturally overlap in some instances, the second list being the largest, but they will be of some assistance in selecting plants.

PLANTING AND GROUPING.

Successful seaside planting depends largely on the time selected. As a general rule deciduous shrubs move well in the autumn, and, wherever it is possible, all planting should be finished by the middle or end of November. No planting should be done in mid-winter. Evergreens are often moved with success in the autumn, but, on the whole, in exposed situations, spring, *i.e.* April or early May, is by far the best time. If the weather is dry, a good soaking with water should be given immediately after planting.

The preparation of the ground near the sea is the same as that recommended in the notes on general planting but it is doubly important that land to be planted should be thoroughly broken up, so as to give the roots of the freshly moved shrubs every chance.

In arranging groups or belts near the coast it is necessary to plant thicker than inland, and what are termed "fill ups" or "nurses"—cheap plants such as Privet, *Berberis Aquifolium*, Sea Buckthorn, *Ribes*, etc., will be found useful to fill up and shelter, to some extent, the better shrubs. Later on, in the course of a few years, these can be cut out as the space is required by the choicer specimens.

In seaside planting it is essential that all shrubs and small trees of any height should be securely staked for the first few years.

SHELTER.

Shelter in any form is of the greatest possible importance, and may be provided by using wattle hurdles, hurdles stuffed with gorse, or anything to break the force of the wind for the first few years until the shrubs are well established. If these shelters are unsightly, they can, of course, be removed during the summer months, but wattle hurdles are not objectionable and can be bought at moderate cost from any basket maker. A useful size is 4ft. by 6ft. and the cost is about 4s. each.

Reeds, where they can be obtained, make a good shelter fence, quite impervious to all wind, but these are more permanent and less easily moved than the hurdles. The reed fences are not at all unsightly, and are preferable to the ordinary close-boarded fence and last generally about seven to ten years if well put up. As the shrubs grow, they will shelter each other, particularly if Austrian Pines, or Evergreen Oaks are planted on the exposed side.

List of shrubs for planting in the most exposed situations on the coast, liable to salt winds :—

Atriplex Halimus.

Bupleurum fruticosum.

Cistus laurifolius.

Euonymus japonicus.

„ „ var. *aureus.*

„ „ var. *flavescens.*

Hippophae rhamnoides (Sea Buckthorn).

Lupinus arboreus.

Lycium chinense (syn. *L. barbarum*).

Pinus montana.

Quercus Ilex. Holm Oak. Evergreen Oak.

Sambucus nigra var. *foliis aureis*. Golden Elder.

Tamarix anglica (Common Tamarix).

„ *tetrandra*.

Ulex europaeus (Common Gorse).

„ „ var. *flore pleno*.

Veronica Blue Gem.

List of shrubs for planting in exposed situations slightly back from the sea :—

Baccharis patagonica (Groundsel Tree).

Buddleia globosa.

„ *variabilis*.

„ „ var. *magnifica*.

„ „ var. *Nanhoensis*.

„ „ var. *Pink Pearl*.

„ „ var. *rosea*.

„ „ var. *Veitchiana*.

Cistus corbariensis.

„ *crispus*.

„ *cyprius*.

„ *Silver Pink*.

„ *villosus*.

Cupressus macrocarpa (Monterey Cypress).

„ „ var. *lutea*.

Cytisus albus.

„ *nigricans*.

„ *praecox*

„ *scoparius* (Common Broom).

Cytisus scoparius var. *Audreanus*.

„ „ „ „ „Daisy Hill.”

„ „ „ sulphureus “Moonlight.”

Elæagnus angustifolia.

„ macrophylla.

„ multiflora.

„ pungens.

„ „ var. aureo-variegata.

Escallonia Donard Seedling.

„ exoniensis.

„ Ingramii.

„ Langleyensis.

„ macrantha.

„ rubra.

Eucalyptus coccifera.

„ Gunnii.

Euonymus radicans.

Fuchsia Riccartonii.

Griselinia littoralis.

„ „ variegata.

„ macrophylla.

Helianthemum vulgare.

Lavandula Spica (Common Lavender).

Lonicera nitida.

Olearia Haastii.

„ macrodonta.

„ myrsinoides.

„ Gunniana (syn. *O. stellulata*).

„ stellulata macrophylla.

Phlomis fruticosa.

Pinus Laricio nigricans.

Pittosporum tenuifolium.

Pittosporum tenuifolium var. Silver Queen.

„ *Tobira*.

Rosmarinus officinalis.

Senecio Greyi.

Spartium junceum (late Spanish Broom).

Tamarix pentandra (syn. *T. hispida aestivalis*).

„ *plumosa* (syn. *T. Juniperina*).

Veronica Autumn Glory.

„ *supressoides*.

„ *salicifolia*.

„ *Traversii*.

List of shrubs for warm seaside situations where shelter is given by cliffs or at the foot of a wall :—

Abutilon vitifolium.

Buddleia alternifolia.

„ *Colvillei*.

„ *Fallowiana*.

„ *Forrestii*.

Coronilla glauca.

Eleagnus argentea.

Escallonia floribunda.

„ *montevidensis*.

„ *Philippiana*.

Eucalyptus Globulus (Blue Gum).

Helianthemum algarvense.

„ *formosum*.

„ „ var. *unicolor*.

Lippia citriodora (syn. *Aloysia citriodora*).

Romneya Coulteri (Californian Poppy).

„ *hybrida*.

Veronica Andersonii var. Purple Queen.

HEDGES FOR SEASIDE GARDENS.

HEDGES play a prominent part in all gardens but more particularly in those near the coast where anything to break the flatness and give any form of shelter are most welcome. The following list of hedge plants may be found useful :—

Quick or Whitethorn, suitable for loam or heavy land. Myrobella, Cherry Plum. A fast-growing hedge, preferably on light land.

Ligustrum ovalifolium. The best form of evergreen Privet.

Euonymus japonicus. See page 215.

Euonymus japonicus var. *pictus*. See page 215.

Cupressus macrocarpa. See page 204.

Cupressus macrocarpa *lutea*. See page 205.

Lycium chinense. Rough loose hedge for exposed situation. See p. 221.

Fuchsia Riccartonii. Hardy Fuchsia, forms a low hedge. See page 216.

Lavender. Border or low hedge.

Rosmarinus officinalis. Common Rosemary. See page 223.

Tamarix anglica. Loose hedge in exposed places. See page 236.

Hippophae rhamnoides. Sea Buckthorn. Too loose in growth to make a compact fence but stands exposure.

Quercus Ilex. See page 227.

Griselinia littoralis. A typical evergreen coast shrub. See page 217.



Abutilon vitifolium.

Berberis stenophylla. An excellent fence plant but will not stand full exposure. See page 43.

Lonicera nitida. A neat evergreen hedge plant.

Escallonia macrantha. Excellent for a warm coast garden.

Atriplex Halimus. Grey foliage, will not stand much clipping.

SEASIDE SHRUBS.

Abutilon vitifolium.

A fast-growing shrub, unfortunately it cannot be considered hardy. To be grown successfully it should be planted in a warm corner against a wall. If given this it flourishes on the coast as well as inland in the milder districts.

Leaves 4ins. to 8ins. long, alternate, with three points, and very prominent veins on the under side.

Flowers lavender-mauve, in large, open bells somewhat the shape of a mallow, borne in clusters of two or three blossoms together on long woolly stems.

A beautiful shrub in early June with its large lavender blossoms amongst the luxurious foliage that is well worth a sheltered corner.

A native of Chile, easily raised from seed. There is also a white-flowered form.

ATRIPLEX.

Atriplex Halimus. Tree Purslane.

A strong-growing evergreen or sub-evergreen shrub, often 8ft. in height.

Leaves rounded, silvery-grey, with a white down on the under side.

Flowers very small, whitish green, and quite insignificant.

With its silvery-grey foliage, this shrub is valuable for massing, especially in view of the fact that it can be planted in positions fully exposed to salt spray and wind. In some places it is denuded of leaves in the winter by sparrows which are very fond of it, in other districts it is untouched. If birds are troublesome, a few strands of black cotton wound between the tips of the shoots will generally stop them. It grows freely in any well-drained soil. It may be increased by cuttings in late summer.

BACCHARIS.

Baccharis patagonica. Grounsel Tree.

A stiff, low-growing, evergreen shrub.

Leaves $\frac{1}{4}$ in. to $\frac{3}{4}$ in. long, toothed, of a dark glossy green, very thickly packed on the stems.

Flowers yellow, and of no great interest.

A useful evergreen on the coast, with its masses of minute, thick, leaves and crowded branches. So dense is the growth that it is quite impervious even to a searching east wind, which would be fatal to so many plants. It is not particular as to soil and cuttings root easily.

BUPLEURUM.

Bupleurum fruticosum. Hare's Ear.

One of the most valuable evergreen shrubs for gardens near the sea, forming a dense bush 4ft. to 7ft. in height.

Leaves 3ins. to 4ins. long, narrow, pointed, rich green with distinct mid-rib of a lighter shade, paler on the

under side. The young wood assumes a brownish-red colour.

Flowers yellow, small, in large, flat umbels borne at the ends of the stems.

Flowering freely during August or September, just at the time when flowering shrubs are most wanted. It is strange that this attractive evergreen is so seldom seen in our seaside gardens. It revels in a salt wind and will grow in any soil, and is quite happy in chalk. The leaves, when crushed, have a pungent smell. It may be propagated by cuttings.

CORONILLA.

Coronilla glauca.

A much branched, low shrub not generally considered hardy, but in a sheltered spot near the sea, or at the foot of a warm wall, it comes safely through a severe winter.

Leaves glaucous grey, fleshy, pinnate.

Flowers bright yellow, pea-shaped, produced in umbels, very fragrant during the day but after sunset are almost devoid of scent.

This delightful old-fashioned shrub was described in the "Botanical Magazine" as long ago as 1787, when it was much prized as a cool greenhouse plant. However, it is far more useful grown out of doors in a warm corner where it is a cloud of yellow blossom from March to June.

A native of Southern Europe. A warm, light soil suits it best, it is not easy to transplant and where possible should be planted from pots in the spring. Small cuttings root easily in a little heat.

CUPRESSUS.

Cupressus macrocarpa. Monterey Cypress.

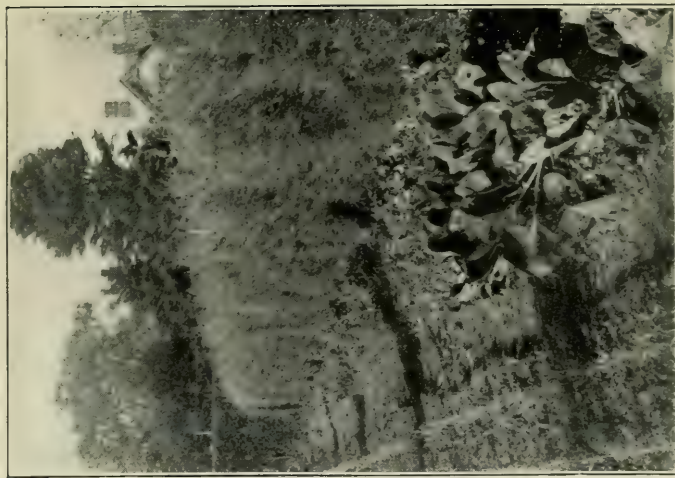
A fast-growing conifer from Monterey on the coast of California. In severe winters inland it is often badly damaged by frost, particularly when planted in clay soil. In light, sandy soil, or on the coast, it stands exposure well, since cold winds do not harm it as much as low temperatures inland.

The leaves are very small, wiry, of a rich dark green.

The growths are upright in the young state, becoming flatter and more spreading in older trees. Extremely rapid in growth, it forms an excellent hedge, often growing as much as 3ft. or 4ft. in a single season. In fact it is best used as a fence, for, when isolated specimens are planted, unless they are very carefully staked, they grow so fast that they are apt to be blown over by high winds. In setting out a hedge small plants, from pots, 12ins. to 18ins. high, give the best results. They should be put in 18ins. to 24ins. apart, the end of April or early in May being the best time, and care should be taken to see that the roots are thoroughly moist when turned out. They will look very small at first but will grow quickly and soon form a hedge. No cutting is necessary till after the second winter (assuming planting was carried out in the spring). By this time they will be somewhat irregular in height and the taller plant should be cut back by a foot or more, others will require only the tips taken out, the sides may also be slightly trimmed so as to bring into neat hedge form. They will now grow very fast and will



Tree twenty years after planting.



Hedge three seasons after planting.

Cupressus macrocarpa.

want to be clipped each spring about the end of April, and if they grow strongly, again in August, in the same way as a Yew fence. A good plan is to cut the hedge slightly tapering towards the top, this encourages a fine glossy growth.

It should never be cut in late autumn or winter.

As *C. macrocarpa* is generally raised from seed, there is a good deal of variation, but the closer growing forms are preferable and may be termed the Yew of the seaside.

The illustration gives some idea of how quickly a hedge may be formed. Planted in spring, 1923, quite close to the sea and fully exposed to the north-east winds, small plants were used and were sheltered by low wattle hurdles. At the end of the third summer the hedge is 5ft. high and 18ins. thick. Another illustration represents a single specimen equally exposed to salt wind, some twenty years old. This shows how different the growth becomes with age.

Cupressus macrocarpa var. *lutea*.

A bright golden variety which is generally grafted on the common form. The grafted trees seem to grow more steadily and less rapidly than seedlings and this variety is therefore less affected by wind. It forms a handsome golden shrub or may be used as a hedge.

ELEAGNUS.

A family containing some valuable coast shrubs, both evergreen and deciduous, all of which are more valued for their foliage than their flowers, which are insignificant but often sweet scented. They require

no special cultivation, but are perhaps best in not too rich a soil, and in situations not too exposed. The strongest growing species will make large rounded shrubs. Some of the variegated kinds are very showy with shining golden foliage. *Eleagnus* thrive best in full sunshine.

They are not easy to propagate, seeds, where they can be procured, being the best method, but cuttings in early autumn placed in sand under a hand-light or in a little warmth can often be rooted.

Eleagnus angustifolia.

A robust, fast-growing shrub. The young wood is covered with silvery enamel, and the foliage also is silvery in the young state, changing to green later in the season.

Leaves 3ins. to 4ins. long, narrow, the under side being covered with silvery scales.

The small, tubular, sweet-scented flowers are of a greyish colour and are produced in early summer.

A very telling deciduous shrub, quite hardy on the the sea coast and not requiring a rich soil.

Eleagnus argentea. Silver Berry.

A most attractive grey-foliaged shrub, upright in growth, but not so vigorous as most of the family.

Leaves 2ins. long, of a glossy, silvery-grey.

Flowers yellow, very small, produced in early summer, and sweet scented.

Though this shrub is quite hardy, the leaves fall with the slightest frost.

Eleagnus macrophylla.

A strong-growing shrub, 5ft. to 6ft. high, and as much in diameter.

Leaves 3ins. long and nearly as broad, rounded, bright, glossy green above, with silvery scales. The under side is aluminium-grey. It is this grey under side that makes it such an effective shrub, when in the wind the whole plant has a grey shimmer.

Flowers dull white, in small, drooping clusters in November, and are deliciously scented.

Eleagnus multiflora, syn. *E. longipes*.

Another strong-growing coast plant. When fully grown forms a large, rounded bush 10ft. to 15ft. in height and nearly as much through. An excellent plant for an exposed sunny place in light-sandy soil.

Leaves small, dark green, bronzy-brown on the reverse side.

Flowers insignificant but pretty, with brown fruit later in the summer.

Eleagnus pungens.

A useful evergreen of vigorous branching growth, occasionally reaching 10ft. in height.

Leaves 3ins. to 4ins. long, pointed, with slightly curled edges, tough in texture, dark shining green on the upper side, the under side being silvery with a very prominent mid-rib, of a bronze colour. The young wood is also covered with rough bronze scales, which makes it a most pleasing shrub.

Flowers white, very small, and sweet scented, produced in autumn.

Eleagnus pungens var. *aureo-variegata*.

A handsome variegated form, the dark green leaves being splashed with yellow. This shrub produces a very decorative effect in winter.

ESCALLONIAS.

A most valuable race of seaside shrubs and climbers, the majority of which are evergreen. Many of them are barely hardy enough to stand a severe winter inland, without the shelter of a wall. It is on the coast that they flourish and can be used as hedge plants, for growing on banks and on the slopes of cliffs, or as wall plants. Their thick evergreen leaves double up in the high winds and salt spray, only to relax again the next morning quite unharmed. Escallonias are not particular as to soil, but no manure should be used. Cuttings of half-ripe wood root freely either in a little heat or under a hand-light, towards the end of the summer. They should be cut clean in the usual way, just below a joint, small cuttings 2 ins. to 3 ins. long root more readily than larger sprays.

Escallonia "Donard Seedling."

A robust-growing, upright evergreen shrub, a hybrid between *E. Philippiana* and *E. Langleyensis*.

Leaves $\frac{1}{2}$ in. to 1 in. long, rounded, tapering to the base, regularly toothed but smooth towards the stalk, rich glossy green on the upper side, paler on the under side.

Flowers blush-white with deep pink buds, the back of the flowers are stained pink, borne in short clusters at the end of the lateral growths of the current season.



Escallonia Donard seedling.

This charming evergreen will, in sheltered places, form a compact shrub 8ft. to 10ft. in height, the branches being thickly packed with dark green, little leaves and clusters of delicate slightly fragrant blossoms which appear in July and continue off and on until November. Like most *Escallonias* it can be increased by cuttings.

The accompanying illustration gives a good idea of the growth.

Escallonia exoniensis.

Fast growing, branching, evergreen, often attaining the height of 12ft. or more.

Leaves 2ins. long, often curled, tapering towards the base, bright shining green, paler on the under side, edges finely toothed. The bark of the young wood is light brown.

Flowers white to blush-pink, borne in terminal clusters and blossoming continuously through the summer, but not generally very profusely.

A hybrid from *E. rubra* and not one of the hardiest of the family. The plant gives off a curious scent like chemical manure, though it is not so pronounced as to be offensive.

Escallonia floribunda.

An attractive and vigorous evergreen climber or wall shrub often reaching 20ft. in height.

The leaves vary in size from 1½ins. to 3ins. long, quite smooth. The young wood is often red towards the autumn.

Flowers pure white, in terminal clusters, with the individual flowers much larger than those of most of the species. On a warm wall in August or September, covered with a wealth of white blossom, there are few plants to equal it. The flowers are slightly fragrant, the scent resembling that of May.

Roots easily from cuttings. *E. montevidensis* is generally considered a variety of the same species with larger flower spikes.

Escallonia Ingramii.

A vigorous evergreen shrub of garden origin, probably *E. macrantha* is one of the parents.

Leaves $1\frac{1}{2}$ ins. to 2 ins. long, dark glossy green, deeply and regularly toothed edges toward the upper part of the leaf. The stalks are quite bristly.

Flowers rose-pink, in characteristic terminal clusters. Blossoming in July and often on till November in mild seasons.

It is like *E. macrantha* but the leaves are a good deal smaller, the growth is more upright, the flowers are paler and slightly smaller. An excellent seaside shrub or may be used as a hedge inland, but it is best planted at the foot of a wall.

Escallonia langleyensis.

A delightful hybrid, and one of the most charming of flowering shrubs.

Leaves small, $\frac{1}{2}$ in. to $\frac{3}{4}$ ins. in length, rounded, with toothed edges, of a rich, glossy green with three stipules or tiny leaves at the base of each leaf-stalk. The stems of the young wood are brownish and rough to the touch.

Flowers cherry-red, in small terminal clusters.

When this evergreen shrub is in full bloom towards the end of June there are few plants so effective. It is fairly hardy, and does equally well inland and on the coast.

Escallonia macrantha.

An invaluable evergreen shrub for seaside planting, and a most useful wall plant inland.

Leaves 2ins. to $2\frac{1}{2}$ ins. long, broad, with deeply-toothed edges of a particularly glossy dark green, as if the leaf had been varnished. Both the leaves and stalks are sticky, and the young wood is covered with a rough down.

Flowers cherry-red, in terminal clusters of little, tubular blossoms, with a pleasant pungent scent. It is at its best in June, but flowers off and on till October.

One of the best seaside evergreens, standing exposure well. Propagated by cuttings.

Escallonia Philippiana.

A charming deciduous species with neat spreading branches.

Leaves very small, bright green.

Flowers pure white, produced in great abundance along the branches. Planted against a wall or in the open, it forms a cloud of tiny white blossom from Midsummer onwards. Quite one of the hardiest.

Escallonia rubra.

A hardy, vigorous evergreen shrub, and one of the best for inland gardens. In the most severe winters it gets only slightly cut.

Leaves small, 1in. to 1½ins., with toothed edges, but without the gloss and deep colour of *E. macrantha*.

Flowers deep red, borne on thread-like stalks, and continuing to blossom from early July till October.

A native of Chile and a most useful plant for the front of a shrub border or low wall.

EUCALYPTUS. GUM TREE.

A large family of stately trees growing to a great height in their native countries. Here they seldom become really large trees except in Devonshire and Cornwall where fine specimens are found. As seaside plants they are invaluable and even if they only survive a few winters, they are well worth growing. With the exception of *E. Gunnii* and perhaps *E. coccifera*, few are really hardy. *E. globulus* is the fastest growing and makes a good temporary plant.

Eucalyptus coccifera.

A graceful evergreen shrub from Tasmania with silvery-blue foliage. It stands our winters well on the coast, though it is not quite so hardy as *E. Gunnii*.

Leaves in the young state are 1in. to 1½ins. long, rounded, cordate, with a tiny spine at the apex. As the tree gets older, the leaves become much longer and often alternate.

Flowers yellowish-buff, produced in terminal heads, the time of flowering varying a good deal but generally occurring in the autumn.

The stems are very warty, the young wood being almost bristly. Propagated by seed.

Eucalyptus globulus. Blue Gum.

A handsome evergreen species with wonderful glaucous blue foliage, and of extremely fast growth. A young established plant will often put on 6ft. or 8ft. in a single season. Planted on the sheltered cliffs at Felixstowe, four or five-year-old trees are now some 20ft. in height. Unfortunately this species is not hardy, except in the most favoured situations and it remains to be seen what severe weather will do, but even if killed outright, they will have played their part in quickly furnishing a new garden in a way that no other plant can do in the time.

Leaves 3ins. to 5ins. long, stalkless, square at the base, pointed at the apex, blue-green on the upper surface, silvery beneath, and of a leathery texture. The stems on the young wood are square. The new foliage has a distinct blue shade when ruffled by the wind, and a pleasant pungent odour when crushed. It is easily raised from seed but flowers are rarely produced in this country out of doors.

Eucalyptus Gunnii.

This is the hardiest Eucalyptus of all. It does not, however, grow nearly so fast as *E. globulus* and, although glaucous, it has not the striking blue-grey foliage. On young plants the leaves are rounded with a distinct notch at the apex. Their size is very variable and as in many species of Eucalyptus, the leaves become longer and narrower as the tree becomes more mature.

Flowers are produced in small tufts in the axils of

the leaves in late autumn but the tree must attain a good size before it blossoms. Propagation is by seed which germinates readily in a little heat.

A native of Tasmania.

EUONYMUS. SPINDLE TREE.

This is undoubtedly the best evergreen shrub for coast planting. It is also a valuable town plant and will flourish in shade or under large trees. Inland it is apt to be cut by severe frost, but even so is rarely killed. On the other hand, where exposed to the influence of the sea, it is perfectly hardy.

Owing to its good qualities as a coast shrub it has been planted to such an extent in public seaside gardens and in such monotonous rows that it becomes wearisome to the visitor. While with a little knowledge and forethought many other shrubs may be introduced which add variety and interest.

Of the easiest possible cultivation, it thrives in almost any soil, not necessarily very rich. In exposed places, April, or even May, is the best time for planting. For a seaside hedge *Euonymus* is unequalled, a little slow to start into growth at first, but once established it soon forms a compact hedge 4ft. or 5ft. high and some 2ft. through. For this purpose it should be planted 18ins. apart, using plants 1½ft. to 2ft. in height.

Euonymus is easily propagated from small cuttings of half-ripe wood in early autumn. They will be found to strike readily under a hand-light or even in the open in a sheltered, shady border. Of late years a particular mildew has been troublesome on the young growths

towards the end of the summer. In the case of hedges it can usually be clipped off, but if badly attacked it is necessary to spray with a fungicide. There are many varieties, among which the following have proved the most satisfactory.

Euonymus japonicus.

A compact, dense evergreen, sometimes 12ft. in height or more against a wall.

Leaves 2ins. to 3ins. long, 1in. to 1½ins. broad, bluntly rounded, regularly notched at the edges, of a glistening, shining, rich green above, paler and dull on the under side.

Of the many varieties this is perhaps the most useful for seaside planting. It is generally known in nurseries as the broad-leaved green.

Euonymus japonicus var. *aureus.*

A handsome variegated form with bright golden foliage. Somewhat slower in growth than the type.

Euonymus japonicus var. *flavescens.*

A compact growing shrub, with smaller leaves than the true *E. japonicus*. The young growths and foliage are a brilliant golden-yellow during the early summer months and change to a yellowish-green in the autumn.

A group in an exposed position in a seaside garden gives a striking piece of colour.

Amongst other varieties is a form known in nurseries as *E. pictus*, this is probably merely a variety of *E. japonicus*. It is, however, a most useful shrub for planting under trees in our towns, or as a coast plant.

The leaves are narrower and more pointed than *E. japonica*. There is also a showy variegated form with bright golden leaves margined with green. This is apt to revert to the green form.

Small cuttings, about 2ins. to 3ins. long, strike with ease in a frame or under a hand-light during September and October.

Euonymus radicans.

A low, spreading evergreen of slower growth than *E. japonicus*.

Leaves 1½ins. to 2ins. long, rounded. The young foliage is a distinct pale golden-green, changing to a dull dark green as the summer advances.

The many variegated forms of this species are the most attractive, some having showy silver-margined leaves, while in others the foliage is of a distinctly pink shade.

Planted against a wall, it will run up a considerable height and forms a handsome creeper. It is also useful for planting on banks or the edge of a border, in fact, in any place where a low shrub is required.

It is a native of Japan and is easily increased by cuttings or division. Quite hardy and will stand a fair amount of shade.

FUCHSIA.

Fuchsia Riccartonii.

One of the most delightful of our old-fashioned shrubs and much hardier than is generally supposed. On the coast it is seldom damaged by frost while inland where the growth is soft in the autumn it is often badly

cut back. However, it generally shoots up again from the roots and is better than ever by midsummer.

Leaves 1 ins. to $1\frac{1}{2}$ ins. long, pointed, coarsely toothed, of a very dark green. The new wood is red towards the autumn.

Flowers purple with brilliant crimson-red calyx, the pendant blossoms being borne on dainty red stalks. Continuing to bloom through August and well on into the autumn at a time when flowers are often scarce, it is one of the most decorative garden shrubs. This species forms a charming hedge and stands exposure well. When grown as a hedge, it should be slightly trimmed back each spring. It thrives in any well-drained soil and is easily increased by cuttings which root freely in a little heat.

GRISELINIA.

Griselinia littoralis.

A vigorous, compact growing evergreen shrub, 8 ft. to 10 ft. in height. A native of New Zealand, it cannot be called hardy except on the coast, where it seems to revel in a salt wind.

Leaves $1\frac{1}{2}$ ins. to 2 ins. long, rounded, thick, leathery, smooth, of a lustrous yellowish-green on the upper surface, paler beneath. The young wood and leaf-stalks are straw coloured.

Flowers yellowish, insignificant, in May, but of no particular beauty.

A useful seaside shrub, making a welcome change from the almost universal *Euonymus* which is so much planted near the sea. It will succeed in almost any

soil and can be used as a hedge. Easily increased by cuttings in early autumn.

G. littoralis variegata.

An effective variegated form in which the leaves have golden edges.

Griselinia lucida var. *macrophylla.*

A handsome plant with much larger leaves than *G. littoralis* but of doubtful hardiness.

HIPPOPHÆ.

Hippophae rhamnoides. Sea Buckthorn.

A loose-growing deciduous shrub or small tree, which deserves to be more widely planted.

Leaves small and narrow, flowers insignificant. The bark on the upper side of the stems has the appearance of being painted with silver enamel. In autumn there is no more beautiful plant when the stems are thickly covered with orange berries, which blend with the grey foliage.

As the plant is unisexual, care should be taken both sexes are included in planting a group for no berries will form on the female plants unless their flowers are fertilized by pollen from a male plant. It is, however, only necessary to include one male plant in a group of half-a-dozen female plants. One of the best seaside shrubs, for it will stand salt spray unharmed, and it thrives equally well in an inland garden. Increased by seed or sometimes by suckers.

LAVENDER.

Lavandula Spica. Common Lavender.

This old-fashioned favourite is so well known that it needs little description.

Leaves 2ins. to 3ins. long, narrow, of silvery grey, particularly in the young state.

Flowers deep lavender, in close heads at the end of stiff stalks, during July and August, deliciously fragrant.

Lavender flourishes in light, well-drained soil, either on the coast or inland and may be used as a low hedge or planted in blocks. It requires clipping each spring if it is not to get straggly. It is easily propagated from cuttings in early autumn or in spring. *L. vera* is closely allied to *L. Spica* and is said to be more strongly scented.

LIPPIA.

Lippia citriodora, syn. *Aloysia citriodora*. Lemon-scented Verbena.

An old favourite of our gardens with leaves which are delightfully fragrant when crushed. To grow successfully near the sea it requires the shelter of a warm wall where it soon forms a deciduous shrub 10ft. to 20ft. in height.

Leaves $3\frac{1}{2}$ ins. to $4\frac{1}{2}$ ins. long, narrow, tapering, pointed, produced in threes, or sometimes in fours, of a pale green. The stems are usually ribbed.

Flowers pale lilac, in terminal, loose panicles in August, of no particular beauty.

Although a native of Chile, it is seldom killed outright by severe weather and shoots up strongly from the roots each spring, attaining a height of 4ft. or 5ft. by the autumn. Where possible it should be protected during very severe weather. It flourishes in any warm soil and is quickly increased by cuttings.

LONICERA.

Lonicera nitida.

An evergreen Chinese shrub of spreading leafy growth, which stands exposure to the sea well.

Leaves small, rounded, about $\frac{1}{4}$ in. long, bright, glossy green and of leathery texture. The young wood has a distinctly purplish shade.

Flowers small, white, with a yellow tinge and sweet scented. July.

This Chinese honeysuckle has already proved its value as a garden plant both inland and near the sea, and it may also be used to form a neat dwarf evergreen hedge. It does not appear to be exacting as to soil and it is easily propagated by cuttings in the early autumn.

LUPINUS.

Lupinus arboreus. Tree Lupin.

A low, spreading bush which should not be allowed to grow too rampantly or the long branches will be torn from the main stem in heavy wind. A native of California and the Pacific Coast. Tree Lupins are of exceptional value for planting on light, sandy or poor soil near the sea, producing masses of flower during

May and June and continuing though less abundantly till August.

Leaves compound, with usually nine leaflets of a sage green.

Flowers pale yellow, in upright racemes, often 7ins. in length, and very sweet scented.

One of the easiest plants to propagate, either from cuttings which root readily in September or from seed. Seedlings will generally flower the second year. Tree Lupins are not easy to transplant and should be planted out when a few inches high or kept plunged in pots.

There are many varieties in cultivation, Snow Queen being one of the best white-flowered varieties.

LYCIUM.

Lycium chinense, syn. *L. barbarum*. Box Thorn.

A loose-growing, straggly shrub which has now so completely naturalized itself in many maritime districts that it is locally considered to be indigenous.

Leaves 2ins. to 4ins. long, narrow, pointed at each end, alternate, of a dull green.

Flowers rosy-purple, produced singly or in twos or threes from the axil of the leaves, during July and August and followed by red berries in warm seasons or when the plant is grown on a wall.

A useful hardy plant for any dry, exposed situation near the sea or for a rough hedge. It resembles the common Privet, but is more drooping in habit. Cuttings root readily. It is sometimes known as the Tea Plant.

OLEARIA. DAISY SHRUB.

A large family of low, evergreen, flowering shrubs from New Zealand and Tasmania. Many are excellent coast plants, but are too tender for most inland gardens, with the exception of *O. Haastii*. Planted near the sea in full sunshine with little shelter they form most attractive shrubs. Only the hardiest species will be described here.

Olearia Haastii.

A compact evergreen shrub and the hardiest of all the *Olearias*. The most accommodating of all flowering shrubs, it seems to grow equally well in a town garden or in a wind-swept garden close by the sea. Few shrubs give so much return for so little attention.

Leaves 1 in. to 1½ ins. long, rounded, thick, leathery, and like most *Olearias*, grey on the reverse side.

Flowers white, produced in upright clusters of daisy-like blossoms in great profusion during July and onwards, slightly scented. Some gardeners dislike it on account of the untidy appearance of the seed vessels which remain on it well into the winter. These, however, can easily be pulled off if considered unsightly.

Olearia Haastii will thrive in any well-drained soil and little pruning is required, but, if the plants become straggly, they may be cut hard back and they will shoot up again in the kindest way. It can be increased by cuttings.

Olearia macrodonta.

A somewhat loose-growing holly-like shrub, reaching,

in a favoured district, as much as 15ft. in height, and attractive by reason of its ornamental foliage.

Leaves 3ins. to 4ins. long, with toothed margins, concave from edge to edge and grey when quite young, afterwards becoming a glossy olive-green, silvery on the under side. They are arranged alternately on purple-brown stalks.

Flowers in terminal heads, of grey-white daisy-like blossoms, produced early in July.

A charming evergreen shrub for seaside gardens, and also for warm, sheltered positions inland.

Olearia myrsinoides.

A vigorous, branching, evergreen shrub, 6ft. to 8ft. high.

Leaves 2ins. to 3ins. long, pointed, stalkless, dark shining green, silvery on the under side when young, afterwards of a brownish hue.

Flowers in terminal heads of white daisy-like blossoms in June.

Although this shrub has been cultivated for many years, it has never become common, probably owing to the fact that inland it is badly cut in severe winter, even in sheltered positions. On the coast it seems quite hardy and grows freely. Propagated by cuttings in early autumn.

Olearia stellulata, syn. *O. Gunniana*.

A charming little shrub, covered in April with a cloud of daisy-like flowers.

Leaves $\frac{1}{2}$ in. to 1in. long, small, narrow, rough, dull

green, but quite white on the reverse side. The stems of the young wood are also white.

Flowers composed of white ray-florets surrounding a tiny yellow centre, and produced in great profusion on the wood of the previous season. When rubbed, the plant has a herb-like scent.

An attractive spring-flowering shrub on the coast, but barely hardy inland, except in a warm, sunny corner. It prefers a light soil, in which it grows freely. Any pruning required should be done immediately after flowering. It can be increased by cuttings.

A strong-growing form of this species is sometimes grown under the name of *O. macrophylla*. The leaves are larger and of a more glossy green. The flowers also are larger. This should become a useful plant when better known, but is not hardy inland.

PHLOMIS.

Phlomis fruticosa. Jerusalem Sage.

A robust, low-growing shrub, and one of the easiest of plants in dry, sandy soil near the coast where it is quite hardy.

Leaves 2ins. to 3ins. long, soft and flannel-like, of a grey-green colour, the under side being white, netted with veins. The young wood is also white.

Flowers bright yellow, in clusters at the ends of the shoots in late summer.

A useful front-row shrub, for a warm, sunny bank or border, with a faint sagey scent. It is propagated in the autumn by cuttings which strike readily.

PINES.

Pinus Laricio var. *nigricans*.

Better known as the Austrian Pine, is one of the best shelter trees, though hardly standing so much exposure as *P. montana* and *P. Pinaster*. It is a cheap tree and transplants better than some. Like all pines it should always be planted small—1½ft. to 2ft. is a good size.

Pinus montana. Mountain Pine.

A dwarf, spreading species from Central Europe, seldom growing more than 8ft. or 10ft. in height. It has no definite leader but spreads along the ground forming many shoots. Easier to transplant than most pines, it will thrive in quite poor, sandy soil. Extremely hardy and can be successfully used in exposed situations inland or near the sea. This species might well be planted more than it generally is on banks, cliffs and almost any rough ground.

Pinus Pinaster, syn. *P. maritima*. Cluster Pine.

An excellent coast Pine, with somewhat coarse needles or leaves, of the darkest possible green. Owing to its fast growth it is apt to get coarse rooted and difficult to transplant. It is essential that only small plants should be used and, where possible, they should be had in pots or from beds where they have been recently transplanted.

A native of Southern Europe it flourishes in the poorest, sandy soil. On the whole spring is the best time for planting. It is easily raised from seed.

Pinus radiata, syn. *P. insignis*. Monterey Pine.

A handsome, fast-growing species with bright green, soft leaves of a paler tint than most pines. A wonderful seaside tree where it can be given a sheltered position. If on cold, wet ground or fully exposed it has a tendency to turn yellow. It is not easy to transplant owing to its fast growth. It soon becomes coarse rooted and small, recently moved plants should always be selected.

PITTOSPORUM.

A group of shrubs all of which are natives of New Zealand with the exception of *P. Tobira* which belongs to China. Not hardy enough to stand a severe winter but much more hardy than generally supposed, when planted in a sheltered place on the coast. There are many species, but the following are useful garden plants.

Pittosporum tenuifolium, syn. *P. Mayi*.

A beautiful, compact growing evergreen, sometimes 20ft. to 30ft. high, and the hardiest of the group.

Leaves 1in. to 2ins. long, produced in clusters, of a glossy grey-green with waved edges.

Flowers very small, purple and fragrant. The charm of the plant is the greyish foliage and jet-black stems which form a striking contrast.

This most attractive garden shrub may be safely planted inland and on the coast where it can be given slight shelter. Like other species, it is increased by cuttings, which, however, owing to the hardness of the wood, do not root easily.

P. tenuifolium, var. *Silver Queen*.

A variegated variety with silvery foliage with a white edge, which is not infrequently flushed with pink.

Pittosporum Tobira.

An evergreen of compact growth and with a stiff branching habit which never grows to the size of *P. tenuifolium*.

Leaves 2ins. to 3ins. long, of a shining green, bluntly rounded, of leathery texture, with a deep-seated mid-rib.

Flowers creamy-white, borne in terminal panicles and somewhat hidden by the foliage but with a scent equal to that of any hot-house plant.

This interesting shrub is easily grown in any good garden soil, it does best in a warm and not too dry situation. In the more favoured districts it may be used with success as a hedge plant. It can be propagated by cuttings in early autumn, with slight bottom heat.

There is a showy variegated form with leaves somewhat larger than those of the type, edged and splashed with white.

QUERCUS.

Quercus Ilex. Holm Oak. Evergreen Oak.

A majestic evergreen tree or large shrub, sometimes growing to an immense size. For a shelter tree on the coast it is unequalled, the dense mass of small leaves giving remarkable protection against cold winds.

Leaves 2ins. to 4ins. long, narrow, pointed, but varying a good deal both in shape and size, of a dark

glossy green, paler beneath, with a prominent mid-vein, and of a particularly hard, tough texture. The acorns are small, smooth, about $\frac{1}{2}$ in. in length, with short, downy stalks and cups.

Perhaps Evergreen Oaks should not be included in a book on flowering shrubs, but it cannot be over-rated for coast planting.

A native of Southern Europe, it flourishes in light or sandy soil. Slow to start into growth at first, but, after a few years, it grows much more vigorously. For instance in a dry, exposed position on the east coast, in the poorest stony soil, where Pines and other shrubs had completely failed, it was decided to give Evergreen Oaks a trial. Planted in a double row some fifteen years ago, they are to-day large bushes 12ft. to 15ft. high and nearly as much through, forming an excellent wind screen.

A tree of great antiquity, it was much prized by the Romans. Parkinson (1640) speaks of a tree growing in a garden in Whitehall, while Evelyn recommends it for planting.

It is one of the most accommodating of trees and can be allowed to develop into a specimen or kept cut back as a low bush. Seeds form the only practical method of propagating. The acorns should be sown in drills and the young plants must be transplanted, or better, potted up when only a few inches high, for, if left in the seed beds, they soon become coarse rooted and will not transplant.

The pots should be plunged till the young trees are planted out in their permanent positions. May is the

best time for the final planting, and, if the weather is dry, the young plants should be watered in. When once started, they will withstand drought.

They have one drawback, namely that they shed their leaves in May and June, to the great annoyance of the gardener.

RIBES. FLOWERING CURRANT.

A large family of spring-flowering shrubs closely allied to our fruiting currants and gooseberries. The majority are deciduous, vigorous in growth, and may be classed as one of the kindest of shrubs, flourishing in most exposed places near the coast and are found growing in the smoke of our large towns. Ribes form good-sized bushes, but not often more than ten feet in height, indeed they are at their best when kept down to five or six feet.

They will flourish in almost any soil, a good loam suiting them best. Cuttings strike readily in the open during the autumn, in much the same way as the fruiting Currants.

Ribes americanum.

A robust-growing North American shrub, very like common black currant. The flowers and fruit make it of little value as a garden plant. However, it is well worth growing for the brilliant autumn colour, the foliage changing rich shades of red and gold in early October.

Ribes aureum.

A distinct variety from America, 5ft. to 7ft. high.

Leaves $1\frac{1}{2}$ ins. to $2\frac{1}{2}$ ins. long, pale green, deeply toothed, smaller than *R. sanguineum*.

Flowers bright yellow, with a little red centre, and a strong spicy or clove smell. It turns a brilliant yellow in autumn.

Ribes sanguineum.

This with its many varieties is one of the most satisfactory of the early flowering shrubs.

Leaves 2 ins. to 3 ins. long and the same in width, with three lobes or sometimes five, rich green on the upper side, downy beneath. The leaf in size and shape is very like the fruiting currant.

Flowers rosy-pink, in arch racemes on slender stalks about 3 ins. long. Few shrubs are more effective in April, when a mass of pink flowers and just a suspicion of young foliage. It also takes a good autumn colouring.

This species was first found on the north-west coast of America by Menzies, the end of the eighteenth century. To be seen at their best they may be planted singly or in groups of three or five amongst other shrubs, and can be well knifed in if inclined to become straggly.

R. sanguineum var. *albidum*.

Small racemes of whitish flowers, not nearly such an effective shrub as the coloured varieties, and hardly worth giving space to in a garden.

R. sanguineum var. *splendens*.

Large racemes of dark red flowers with paler centre. The young foliage of a distinctly dark green inclining to bronze. A good garden plant.

R. sanguineum var. *atrosanguineum*.

A handsome form with large, deep-coloured flowers.

Ribes speciosum.

A handsome species first found in California by Menzies a century ago, and forms a branching bush about 5ft. high. It is interesting in being one of the first shrubs to break into growth and generally forms fresh, partly developed foliage the end of January.

Leaves rin. to 2ins. long, three lobed, and irregularly cut or notched, of a bright shining green. At the base of each leaf are three sharp, red spines, the young growths are very bristly.

Flowers red, generally in clusters of three, fuchsia-like blossoms during April.

This fine *Ribes* is quite hardy and easy to grow but will not stand full exposure to salt wind as *R. sanguineum*. It can be propagated by cuttings but does not root readily, and layers are most satisfactory.

ROMNEYA.

Romneya Coulteri. Californian Poppy.

A vigorous growing plant or shrub, reaching in a single season 6ft. or 7ft. in height. Introduced from California as long ago as the middle of the last century, it is only during the last twenty-five years that this most beautiful plant has really been appreciated in our gardens.

Leaves 4ins. to 6ins. long, very deeply cut, varying a good deal in size, glaucous green, quite smooth on both sides. The leaf-stalks are covered with tiny brown thorn-like hairs.

Flowers 5ins. in diameter with a mass of golden stamens in the centre surrounded by five crimped pure white petals. The young flowers have a delicious primrose scent when they first open. The first and largest blooms are produced singly. Later in the season they appear in pairs on lateral shoots.

This *Romneya* delights in a warm soil and full sunshine, and, when once established, it will stand the most severe droughts. At first it was considered tender but has now proved to be hardy in the Southern and Eastern counties. Further north, it is safer planted at the foot of a south wall. Each spring the old stems should be cut to the ground and a mass of young growths from the roots will soon take their place.

It is exceedingly difficult to transplant a mature plant and young plants should always be kept in pots in sand or ashes till they can be placed in their permanent position. This is best done in the spring. Neither is propagation easy. Stem cuttings refuse to root, and seed, if produced, seldom germinate. The most satisfactory method is to take root cuttings in spring and to place them in a little heat.

A good seaside shrub where it can have a little shelter, but, as the young growths are brittle, it is wise to stake the plant in the early stages to prevent damage by strong winds.

Romneya hybrida. *R. Coulteri* \times *R. trichocalyx*.

A useful variety possessing many of the good points of each parent, having the robust habit of *R. Coulteri* with the hairy calyx of *R. trichocalyx*.

The flowers are practically the same, the stamens being perhaps paler in colour than in *R. Coulteri*. So far it has proved to be quite hardy and should become very popular in our gardens.

Romneya trichocalyx.

A species very closely allied to *R. Coulteri* but not so upright nor so strong in growth, with a more spreading habit. The two species are easily distinguished by the fact that in *R. trichocalyx* the calyx is covered with stiff hairs or bristles, while in *R. Coulteri* it is quite smooth.

R. trichocalyx is said to be hardier but is not such a good all round garden plant.

ROSEMARY.

Rosmarinus officinalis. Common Rosemary.

A great favourite of our old-fashioned gardens where it has been cultivated for centuries, forming a thick evergreen bush 5ft. or 6ft. high.

Leaves 1in. to 1½ins. long, very narrow, curving over at the edges, dark green on the upper side, grey and downy on the under side, with a strong and pleasant scent when brushed.

Flowers lavender-blue, produced at the axils of the leaves in May, but appreciated more for its close, fragrant, evergreen foliage than for its flowers.

Rosemary is an excellent seaside plant and thrives in any light, warm soil. It also forms a good hedge and stands clipping quite well. For this purpose the most upright growing plants should be selected and planted 18ins. apart.

It is quite hardy on the coast but inland and further north it is sometimes injured in severe winters. Cuttings root freely under a hand-light in early autumn.

Rosemary figured largely in the flower lore of the sixteenth and seventeenth centuries as a sign of remembrance. It was used chiefly at weddings and funerals ; when used at a wedding it was always dipped in scented water, whereas for a funeral it was dipped in ordinary water and placed in the coffin. It was the custom for each mourner to carry a sprig. In the time of the plague it became so scarce around London and was in such demand for funerals that the price rose from "a few pence an armful to several shillings a handful." Rosemary was also supposed to be an effective charm against witchcraft. Another old saying about this plant is that "Where the Rosemary flourishes the Mistress rules."

SAMBUCUS.

Sambucus nigra var. *foliis aureis*. Golden Elder.

A strong-growing deciduous shrub, valuable for its bright golden foliage, particularly when growing in poor soil, in an exposed sunny position, near the sea. Inland in good ground its foliage is inclined to turn the dull green of the common Elder. It is useful as a nurse plant, to be cut out when the better plants are established.

Leaves large pinnate, often roins. long.

Flowers dull white in June, borne in flat corymbs, and of no special interest. Since the young growths produce brighter and more striking foliage, the plant



Senecio Greyi.

ought occasionally to be cut down to the ground. It may be increased by cuttings.

SENECIO.

Senecio Greyi.

A low, spreading shrub from New Zealand, 3ft. to 4ft. high, and often half as much again in width.

Leaves alternate, about 2ins. long on short stalks, glossy green, with a distinct grey edge. The under side white and felt-like, the stems also being covered with white felt. The whole of the young growth is of a silvery grey.

Flowers yellow, daisy-like in loose panicles, continuing in flower through the summer.

Few plants are better adapted for a dry border with plenty of sun, particularly where a grey effect is required. Hardy by the sea. Cuttings root easily.

TAMARIX. TAMARISK.

A group of maritime shrubs, or even small trees, reaching 20ft. in height on the coast. The common Tamarix is one of the best seaside plants, for which no position is too exposed. On the edge of a wind-swept cliff or just above high-water mark it seems to thrive equally well. Some of the choicer species require a little shelter but are well worth growing both for their flowers and for the graceful wiry sprays of foliage, which double up before a strong wind, and remain quite unharmed. The Tamarix is of the easiest cultivation on the coast, it thrives in any soil, from the poorest sand to a stiff clay. The plants seem to have

the power of absorbing moisture from the salt winds, while, when planted inland, they require more moisture and better soil. *T. pentandra* and *T. tetrandra* form handsome garden plants whether on the coast or inland. The *Tamarix* roots freely from cuttings of ripe wood taken off a few inches long and inserted in sandy soil in early autumn. It derives its name from the Spanish river Tambre.

Tamarix anglica. Common *Tamarix*.

A strong-growing, wiry shrub with erect slender branches and reddish bark. This species is much confused with *T. gallica* and there is only a slight botanical difference between them.

The leaves are very small, scale-like, closely packed on slender stems.

Flowers pink, in small knobs produced in July onwards.

In the eastern counties it is largely used on the cliffs and on the walls of salt water estuaries, for holding up the banks. It also forms a good hedge and for this purpose it should be planted a foot apart and kept clipped annually. As a creeper on an exposed wall it will quickly run up 25 feet or more and will cover all the available space with its feathery, green branches.

Tamarix pentandra, syn. *T. hispida* var. *aestivalis*.

A delightful deciduous species with silvery-grey foliage, seldom more than 6ft. to 8ft. in height, which can, however, be kept down to 3ft. by careful pruning.

The leaves are minute, thickly packed on the young shoots in the way that is characteristic of this genus.

Flowers rosy-pink, in erect plume-like heads. Unlike most of the species these are produced on the young wood of the same year.

As a garden plant it is perhaps the most beautiful *Tamarix*, and the fact that it flowers in August at a time when few shrubs are in blossom adds to its value. It is seen to the best advantage when planted in groups in front of taller shrubs, and to procure the best results with large flower-heads it is essential that it should be pruned hard back in the early spring.

Tamarix plumosa, syn. *T. juniperina*.

A beautiful species, forming masses of plume-like foliage, suggesting an asparagus fern. In some cases it attains the height of a small tree with a stem 5 ins. in diameter, but generally dies back in the smaller state.

Not nearly so hardy nor so vigorous as the common species.

Tamarix tetrandra.

A graceful shrub often 12 ft. in height. The earliest to blossom with masses of small cylindrical pink racemes of tiny flowers produced on the old wood. Seen against a dark background when in full flower, it forms one of the most attractive shrubs and deserves to be more widely planted. Cultivation presents no difficulties and it thrives equally well on the coast or inland.

GORSE.

Ulex europaeus. Common Gorse.

A dense, spiny evergreen shrub, which grows in vast masses on our commons and waste lands where it produces gorgeous yellow blossoms during the spring months. It is not of much value as a garden plant except on poor, sandy soil near the sea, where it can be used as a "wind break."

Gorse is almost impossible to transplant when it has attained any size. It should be grown from seed where it is to remain, or be planted out when only an inch or two high.

Ulex europaeus var. *flore pleno*.

A handsome double variety with brilliant golden-yellow flowers, making a great mass of colour during May. It flourishes on any dry-sandy bank in full sun.

As it does not set seed, it must be propagated by cuttings in early autumn. Small growths taken off with a heel, will root in sandy soil. Owing to the difficulty in transplantation, the rooted cuttings should be kept in pots until they are planted out in their permanent positions.

VERONICAS. SPEEDWELL.

A large family of evergreen shrubs, nearly all of which come from New Zealand. The majority are not quite hardy inland, but as coast plants they are invaluable.

They have hybridized so readily with one another that it is difficult to trace parentage, and it is these

hybrids that are most useful as seaside shrubs. One of the best collections is in Edinburgh Botanic Gardens, where the dwarfer species are most effectively planted in beds of one kind.

The following selection have been found most successful on the east coast.

Veronica Andersonii var. Purple Queen.

A fast-growing, vigorous, evergreen shrub, but not so hardy as Blue Gem. Even on the coast, it is sometimes cut by severe frost, though rarely killed. The fine specimens on the cliffs at Felixstowe have been planted some twenty years and are now some 10ft. high and the same in diameter.

Leaves 3ins. to 4ins. long, and 1in. broad, of a deep green, the stems flat or oval.

Flowers rich purple in long spikes from the leaf axils. It begins to flower in August and often continues until Christmas in a mild season.

A most valuable maritime shrub planted where it can have a little shelter and full sunshine.

Veronica Autumn Glory.

A hybrid variety of low growth, seldom more than 2ft. to 3ft. in height, a valuable shrub for seaside or inland, one of the hardiest of the family.

Leaves 1in. to 1½ins. long, rounded, and stalkless, of a dark green. The new wood has a reddish-brown tinge.

Flowers rich purple in small erect spikes. During the late summer months and well into the autumn the

purple heads are freely produced. Like most Veronicas it roots freely from cuttings.

Veronica Blue Gem.

A dense, compact-growing shrub, quite unequalled for standing exposure on the coast, growing happily almost into the shingle a few yards above high-water mark, even where it is fully exposed to every wind. It attains a height of 3ft. to 5ft. and even more in diameter.

Leaves $1\frac{1}{2}$ ins. to $2\frac{1}{2}$ ins. long, rounded, of a pale green, stalkless, and of a thick, leathery texture.

Flowers blue to mauve produced from the axils of the leaves in cylindrical spikes or racemes. It begins to bloom in July and continues well into the autumn, growing in any soil, it is best planted in the spring. Cuttings strike readily in the late summer.

Veronica cupressoides.

A distinct, upright shrub, a spray of which might at first sight easily be taken for that of Cupressus macrocarpa, but of a much brighter and paler green.

Flowers mauve-blue, but the charm of the plant is its foliage. It requires a little more shelter than most Veronicas, but it is quite at home at the foot of a warm wall near the sea.

Veronica salicifolia.

A vigorous growing shrub attaining a height of 6ft. or 8ft. in a sheltered position.

Leaves varying in length, 3ins. to 4ins. or more, narrow, pointed, of a particular pale green.

Flowers blush-white to mauve, very freely produced and often arranged in groups.

An attractive plant when in full flower, early in July. Not one of the hardiest, but seldom killed outright. Cuttings root readily.

Veronica Traversii.

A dense growing evergreen shrub, forming a compact rounded mass reaching 10ft. in height, and as far through. It will thrive in any soil.

Leaves very small, rounded and closely packed on the stalks.

Flowers in small spikes of the usual Veronica shape, white with a tinge of purple, produced in great profusion in June.

A good, all-round shrub whether in an inland garden or on the coast. It is easily rooted from cuttings in early autumn.

INDEX.

The most important page reference is placed first.

- Abutilon vitifolium* 201, 199.
Acer pseudo platanus 194.
 Almonds 125.
 Almonds, dwarf 130.
Aloysia citriodora 219, 199.
Amygdalus communis 125.
Amygdalus nana 130.
Atriplex halimus 201, 196.

Baccharis patagonica 202, 197.
 Barberry 21.
 Barberry, common 46.
 Bastard Trenching 5.
Berberis 21, 2, 9, 10; *acuminata* 26;
aquifolium 27, 22, 26; *aristata* 27;
 Autumn Beauty 49; Autumn Cheer 49;
 Autumn colouring 26; *brevipaniculata*
 28; *buxifolia* 28; *buxifolia nana* 29,
 26; *candidula* 29, 26; *carminea* 49;
chitria 29; *concinna* 30; cultivation
 22; *Darwinii* 30, 23, 26, 34, 43; *Dar-*
winii, pruning 25; description of 21;
diaphana 31, 26; *dictyophylla* 32, 26;
dulcis nana 29; dwarf kinds for Rockery
 26; *empetrifolia* 44, 43; evergreen 26;
Fortunei 33; *Gagnepainii* 33, 26;
 grafting 25; hedges 26; *Hookeri* 33,
 26, 47; *Hookeri latifolia* 34; hybrids
 49; *ilicifolia* 34; *insignis* 34; *Jame-*
siana 35; *japonica* 36; *japonica Bealei*
 36; *Julianae* 37; *Knightii* 34; List of
 26; *Lycium* 37; *Neubertii* 38, 34;
polyantha 38, 26, 39; *Prattii* 39; pro-
 pagation 24; pruning 25; *pruinosa* 39,
 21; *replicata* 40; *rubrostilla* 41, 26,
 49; *sanguinea* 42; *Sargentiana* 42, 26,
 37; *Sparkler* 49; *staphiana* 42; *steno-*
phylla 43, 23, 26, 31, 44, 201; *steno-*
phylla Brilliant 44, 26; *stenophylla*
gracilis 44; *stenophylla Irwinii* 44;
stenophylla, pruning 12; *Thunbergii*
 45, 22, 26; *Thunbergii minor* 45;
Thunbergii, pruning 25; *Tom Thumb*
 49, 26; *verruculosa* 45, 26; *verrucu-*
losa, pruning 25; *virescens* 46; *vires-*
cens macrocarpa 46; *vulgaris* 46;
vulgaris purpurea 47; *Wallichiana* 47;
Wilsonae 48, 26; *Wilsonae*, pruning 13;
Wisley hybrids 26; *yunnanensis* 48.
 Bird Cherry 131.
 Black Haw 172.
 Blackthorn 133.

 Blue Gum 213, 199.
 Bone Meal 7.
 Box Thorn 221.
 Brooms 102, 3, 8, 9.
 Broom, common 112, 197; *Etna* 117;
 grafting 18; *Hedgehog* 123; low
 growing 106; propagating 17; Spanish
 122; strong growing 105; White
 Spanish 106.
 Budding 18.
 Buddleias 51, 2, 9.
Buddleia alternifolia 52, 199; *Colvillei* 52,
 199; *Fallowiana* 53, 199; *Forrestii* 53,
 199; *globosa* 54, 197; pruning 14;
variabilis 54, 197; *variabilis magnifica*
 55, 197; *variabilis Nanhoensis* 55, 197;
variabilis Pink Pearl 55, 197; *variabilis*
rosea 56, 197; *variabilis Veitchiana* 56,
 197.
Bupleurum fruticosum 202, 196.

 Californian Poppy 231, 199.
Ceanothus 57, 8; *alba flore pleno* 64;
Albert Pittet 64; *americanus* 59;
azureus 60, 63; *azureus*, pruning 14;
Ceres 64; cultivation 58; *dentatus* 60,
 57, 59; *dentatus*, pruning 12; *divari-*
catus 61; *Fendleri* 61; *Gloire de Ver-*
sailles 63, 57, 60; *Gloire de Versailles*,
 pruning 13; *Indigo* 64; *Leon Simon*
 64; nomenclature 59; *papillosus* 61,
 57, 60, 63; *papillosus*, pruning 12;
 propagation 59, 17; pruning 58; *ri-*
gidus 61; *thyrsiflorus* 62; *thyrsiflorus*
griseus 62; *Veitchianus* 63, 59; *Veitch-*
ianus, pruning 12.
Cerasus luteovirens 147; *roseo pleno* 147.
 Cherries, cultivation 141; flowering 139,
 135; List of, 138; of Japan 3; propa-
 gation 136; soil 138; Treatment of 136.
 Cherry, All Saints 152; Double Morello
 152, 139; *Hupei* 153; Oriental 143;
 Oriental weeping 150, 139; Plum 200;
 Sargent's 153; Siebolds 151; St. Lucie
 152; The Pigmy 154; Waterer's 151;
 weeping rosebud 154; Yedo 147.
 Chinese Apple 170.
Cistus 65, 8, 9; *albidus* 68; *candidissi-*
mus 69; *Clusii* 69, 68; *corbariensis* 70,
 68, 72, 197; *crispus* 70, 68, 197; culti-
 vation 66; *cyprius* 71, 67, 68, 73, 197;
florentinus 71, 68; Gum 66; *hirsutus*

Cistus—continued.

72, 74; *hybridus* 72, 68; *ladaniferus* 72, 71; *ladaniferus* var. *albiflorus* 73; *ladaniferus* var. *immaculatus* 73; *laurifolius* 73, 67, 68, 196; *Loreti* 74; low growing 68; *monspeliensis* 74; *platysepalus* 74, 68, 72; *populifolius* 75, 68; propagation 67; *purpureus* 75, 68; *salvifolius* 75; *Silver Pink* 76, 68, 197; strong growing 68; *Sweet* 66; *villosus* 76, 67, 68, 69, 197.

Clay Land 6.

Cluster Pine 225.

Cornish Elm 193.

Coronilla glauca 203, 193, 199.

Cotoneasters 82, 4.

Cotoneaster acuminata 85; *acutifolia* 86; *adpressa* 86, 84; *affinis* 86; *ambigua* 87; *amoena* 87, 83, 84; *angustifolia* 157; *applanata* 89; *arborescens* 95; *bacillaris* 87; *bullata* 88, 82; *bullata macrophylla* 88; *buxifolia* 88; *congesta* 88, 84; cultivation 85; *Dammeri* 94; *Dielsiana* 89, 84; *divaricata* 89; evergreen or subevergreen 84; for rock-work 84; for walls 84; *foveolata* 90; *Franchetii* 90, 83, 84; *frigida* 90, 83, 84; *frigida-Vicarii* 91; *glaucophylla* 92; *Harroviana* 92; *hebeophylla* 92; *Henryana* 93, 82, 83, 84; *horizontalis* 93, 82, 83, 84, 86; *horizontalis perpusilla* 94; *horizontalis variegata* 94; *humifusa* 94, 84; *hupehensis* 94; *integerrima* 95, 101; *lactea* 95; *Lindleyi* 95; *macrophylla glacialis* 88; *microphylla* 96, 84, 89; *moupinensis floribunda* 88; *multiflora* 96, 84, 95; *nummularia* 95; *pannosa* 97, 83, 92; propagation 85; *pyrenaica* 88; *rotundifolia* 97, 83, 84; *rubens* 98; *rugosa Henryana* 93; *salicifolia* 98, 82, 83; *salicifolia floccosa* 98, 84; *salicifolia rugosa* 99, 84; *serotina* 99, 92; *Simonsii* 100, 10, 83; *turbinata* 101; *thymaefolia* 100, 82, 84; *vulgaris* 95; *Zabelii* 101.

Crab Apples 3.

Crataegus (Firethorn) 156; *Pyracantha* 158, 156.

Cupressus macrocarpa 204, 193, 197, 200; *lutea* 205, 197, 200.

Cuttings, preparation of 16.

Cytisus 102; *albus* 106, 105, 197; *albus roseus* 106; *Andreanus* 102, 3, 105; *Andreanus prostratus* 106; *Ardonii* 107, 103, 106; *Beanii* 107, 103, 106; *biflorus* 112; *capitatus* 116; *Cornish Cream* 107, 3, 105; cultivation 103; *Dallimorei* 108, 103, 106; *decumbens* 108, 106; *kewensis* 109, 3, 103, 106; *leucanthus* 109; low growing 106; *monspessulanus* 110, 105; *nigricans* 110, 103, 104, 105, 197; *nigricans Carlieri* 110; *nigricans*, pruning 13; *Osbornii* 111, 103, 105; *pilosa* 103; *praecox* 110, 102, 105, 197; *praecox alba* 111; propagation 105; pruning

Cytisus—continued.

12; *purgans* 112, 106; *purpureus* 112, 106; *ratisbonensis* 112; *schipkaensis* 109; *scoparius* 112, 102, 197; *scoparius prostrata* 115; *scoparius sulphureus* 105; *scoparius sulphureus "Moonlight"* 115, 198; *scoparius Andreanus* 113, 198; *scoparius Andreanus "Butterfly"* 114; *scoparius Andreanus "Daisy Hill"* 114, 198; *scoparius Andreanus "Daisy Hill splendens"* 114; *scoparius Andreanus "Donard Seedling"* 114; *scoparius Andreanus "Dragonfly"* 114; *scoparius Andreanus "Firefly"* 115, 105; *scoparius Andreanus "fulgens"* 115; *scoparius Andreanus prostratus* 115; *Sessilifolius* 116, 105; strong growing 105; *supinus* 116; *supranubius* 116; *versicolor* 117.

Cypress, Monterey 204, 200, 197.

Daisy Shrub 222.

Deutzias, pruning 13.

Double Digging 5.

Dyers, Greenweed 121.

Eleagnus 205; *angustifolia* 206, 198; *argentea* 206, 199; *longipes* 207; *macrophylla* 207, 198; *multiflora* 207, 198; *pungens* 207, 198; *pungens aureovariegata* 208, 198.

Erinacea pungens 123.

Escallonia 208.

Escallonia Donard Seedling 208, 198; *exoniensis* 209, 198; *floribunda* 209, 199; *Ingramii* 210, 198; *langleyensis* 210, 198; *macrantha* 211, 198, 201; *montevicensis* 210, 199; *Philippiana* 211, 199; *rubra* 211, 198.

Eucalyptus 212; *coccifera* 212, 198; *globulus* 213, 199; *Gunnii* 213, 198.

Euonymus 214; *japonicus* 215, 196, 200; *japonicus aureus* 215, 196; *japonicus flavescens* 215, 196; *japonicus pictus* 215, 200; *radicans* 216, 198.

Evergreen Oak, 227, 197.

Evergreens, transplanting 8.

Flowering Crabs 161.

" Currant 229.

" Shrubs, popularity 1.

Fuchsia Riccartonii 216, 198, 200.

Genista 102; *aetnensis* 117; *anglica* 117; *anxantica* 118; *candicans* 110; *cinerea* 118, 103, 105, 122; *dalmatica* 118; *germanica* 119, 106; *hispanica* 119, 103, 106; *horrida* 119, 103; *junccea* 122; low growing 106; *monosperma* 120; *ovata* 120, 102; *pilosa* 120; *radiata* 121, 119; *sagittalis* 121, 106; strong growing 105; *tinctoria* 121, 106; *tinctoria mantica* 122; *virgata* 122, 105.

Golden Elder 234, 197.

Gorse, common 238, 197; Spanish 119.

Grafting 18.

Griselinia littoralis 217, 198, 200; *littoralis variegata* 218, 198; *lucida macrophylla* 218, 198.

Groundsel Tree 202, 197.

Grouping 9.

Guelder Rose 185, 172.

Gum Tree 212.

Hare's Ear 202.

Helianthemum 76, 65; *algarvense* 76, 68, 199; *alyssoides* 77; *candidum* 77; *chamaecistus* 81; Fireball 81; *formosum* 78, 68, 199; *formosum unicolor* 78, 68, 199; *halimifolium* 78; *Libanotis* 79, 80; *lunulatum* 79, 68; *ocymoides* 76; strong growing 68; *umbellatum* 80; *vineale* 80; *vulgare* 80, 198.

Hippophae rhamnoides 218, 196, 200.

Holm Oak 227, 197.

Hydrangea paniculata, pruning 14.

Japanese Guelder Rose 172.

Jerusalem Sage 224.

Laburnum 47.

Laurestinus 189.

Lavandula spica 219, 198; *Vera* 219.

Lavender, common 219, 200.

Laying 17.

Lemon Scented Verbena 219.

Lilacs 4.

Ligustrum ovalifolium 200.

Lippia citriodora 219, 199.

Lonicera nitida 220, 201, 198.

Lupin, tree 220.

Lupinus arboreus 220, 196.

Lycium barbarum 221, 197; *chinense* 221, 200, 197.

Mahonia 22; *aquifolium* 27; *japonica* 36.

Manures, chemical 7.

Manuring 6.

Mountain Pine 225.

Myrobella 200.

Nurse Plants 10.

Olearia Gunniana 223, 198; *Haastii* 222, 198; *macrodonata* 222, 198; *myrsinoides* 223, 198; *stellulata* 223, 198; *stellulata macrophylla* 224, 198.

Oval Leaf Privet 10.

Peaches 124.

Persica vulgaris 131.

Philadelphus 4; pruning of 13.

Phlomis fruticosa 224, 198.

Pinus, Black Austrian 193; *insignis* 226; *Laricio nigricans* 225, 198; *maritima* 225; *montana* 225, 197; *Monterey* 226; *Pinaster* 225, 193; *radiata* 226.

Pittosporum Mayi 226; *tenuifolium* 226, 198; *tenuifolium* "Silver Queen" 227, 199; *Tobira* 227, 199.

Planting, depth of 7; general 1; Preparation of ground and 4; treatment after 10.

Plants, raising from seeds 20.

Plums 124.

Populus alba 193; Canadian 193; *canadensis* 193; *fastigiata* 193; Lombardy 193; Silver 193.

Propagation 14.

Propagation at Botanic Gardens, Edinburgh 15.

Pruning 11.

Prunus 124; *acida semperflorens* 152; *Amygdalus* 125; *Amygdalus macrocarpa* 126; *Amygdalus praecox* 126; *avium* 136, 141; *avium*, fl. pl. 152, 136, 139; *Conradinae* 152; *cerasifera* 127, 124; *cerasifera Blireiana* 127, 3, 124; *cerasifera flore pleno* 152; *cerasifera Moseri* 127; *cerasifera nigra* 128; *cerasifera Pissardii* 128, 3; *Davidiana* 128; Double Gean 152; *incisa* 154; *japonica* 129, 134; *japonica flore alba pleno* 129; *japonica flore roseo pleno* 129; *Lannesiana albidia* 154; *mahaleb* 152; *mahaleb pendula* 153; *Mume* 129; *mutabilis stricta* 153; *nana* 130; *nana Gessleriana* 131; *Oshima-Zakura* 154; *Padus* 131; *Padus grandiflora* 131; *persica* 131; *persica camelliaeflora* 132; *persica Clara Meyer* 132, 125; *persica flore albo pleno* 132; *pilosiusculus barbata* 153; *pilosiusculus media* 153; *Rhexii* fl. pl. 152, 136, 139; *Sachalinensis* 153, 143; *Sargentii* 153, 136, 139; *serotina* 132; *serrulata* 143, 142; *serrulata affinis* 144; *serrulata albo rosea* 144; *serrulata Ama-no-gawa* 145; *serrulata Beni-Higan* 154; *serrulata Botan-Zakura* 149; *serrulata Cheal's Weeping* 150; *serrulata Daikoku* 145; *serrulata erecta* 145; *serrulata Fudan Zakura* 145; *serrulata Fugenzo* 146, 138; *serrulata fl. pl.* 136; *serrulata Gioiko* 146; *serrulata grandiflora* 146, 139; *serrulata Hizakura* 150, 136, 138; *serrulata Hokusai* 147; *serrulata Horinji* 150; *serrulata J. H. Veitch* 136, 138; *serrulata Jonioi* 144; *serrulata Kanzan* 150, 138; *serrulata Kirin* 148; *serrulata Kojima* 148; *serrulata Lidara nova* 150; *serrulata Longipes* 148; *serrulata luteoides* 147; *serrulata Moutan* 149; *serrulata nobilis* 147; *serrulata Ohnanden* 150; *serrulata Ojochin* 136, 138; *serrulata Oku-Miyako* 148, 144; *serrulata Oshimazakura* 144; *serrulata pendula fl. pl.* 139; *serrulata purpurea* 149; *serrulata rosea* 150; *serrulata rosea pleno* 138; *serrulata Sekiyama* 150; *serrulata Senriko* 138; *serrulata Shiro-fugen* 144; *serrulata Shiro-Shidare* 154; *serrulata Shujaku* 152; *serrulata Sieboldii* 151; *serrulata Takasago* 151; *serrulata Temari* 151; *serrulata Tora-no-o* 144;

Prunus—continued.

serrulata Ukon 146, 139; serrulata Usibeni-higan 154; serrulata Veitchiana 146; serrulata versicolor 151; serrulata Yae-Akebono 151; serrulata Yae Murasaki-Zakura 149; sinensis 129; speciosa 154; spinosa 133; spinosa purpurea 133; subhirtella 154; subhirtella autumnalis 154, 3; subhirtella rosea 154; subhirtella pendula 154; subhirtella albo-rubescens 154; triloba fl. pl. 134; yedoensis 154; Yoshino 154.

Purple Plum 3.

Pyracantha 156; angustifolia 157; coccinea 158, 156; coccinea Lalandii 158, 156; crenulata 159; crenulata Rogersiana 160; fungus *Fusicladium* 157; Gibbsii 159, 156; Gibbsii yunnanensis 160; propagation 156; Rogersiana 160, 156; Rogersiana forma aurantiaca 160.

Pyrus 161; aldenhamensis 162, 171; arnoldiana 162, 171; baccata 163; Eleyi 163, 3, 162, 171; floribunda 164, 171; floribunda atrosanguinea 165, 171; floribunda, pruning 12; Halliana 165, 171; ioensis 166; ioensis fl. pl. 166; malus floribunda 164; malus floribunda purpurea 167; malus Niedwetzkyana 167; Parkmanii 165; propagation 161; prunifolia 167, 163, 171; purpurea 167, 171; purpurea, pruning 12; Ringo 168; Sargentii 168, 171; Scheideckeri 169; spectabilis 170, 171; spectabilis Kaido 170.

Quercus Ilex 227, 197, 200.

Quick 200.

Rhododendrons 4.

Ribes americanum 229; aureum 229; pruning 12; sanguineum 230, 194; sanguineum albidum 230; sanguineum atrosanguineum 231; sanguineum splendens 230; speciosum 231.

Rock Rose 65.

Romneya Coulteri 231, 199; hybrida 232, 199; trichocalyx 233.

Rosmarinus officinalis 233, 199, 200.

Rosemary, common 233.

R. H. S. Gardens, Wisley 2.

Sambucus nigra foliis aureis 234, 197.

Sea Buckthorn 218, 196.

Sea-side Gardens, Hedges 200.

Seaside Planting 192; List of shrubs for 196; Preparation of ground 195; Reed Fences 196; Shelter 196; Wattle Hurdles 196; Seaside Shrubs 201; Nurse plants 195; Planting and Grouping 195.

Seeds 19.

Senecio Greyi 235, 199.

Siberian Crab 163.

Silver Berry 206.

Snowball Tree 186, 173.

Soil 17.

Spanish Broom, late 199.

Spartium junceum, 122, 47, 102, 105, 199.

Speedwell 238.

Spindle Tree 214.

Spiraeas 14; pruning 12.

Staking 7.

Sun Rose 65.

Sun Rose, common 80.

Sycamore, common 194.

Tamarisk 235.

Tamarix anglica 236, 197, 200; common 236, 197; gallica 236; hispida aestivalis 236, 199; hispida, pruning 14; juniperina 237, 199; pentandra 236, 199; plumosa 237, 199; tetrandra 237, 197; tetrandra, pruning 14.

Tea Plant 221.

Transplanting, time for 8.

Treatment after planting 10.

Tree Purslane 201.

Ulex europaeus 238, 197.

Ulex europaeus flore pleno 238, 197.

Ulmus stricta 193.

Veronicas 193.

Veronica Andersonii Purple Queen 239, 194, 199; Autumn Glory 239, 199; Blue Gem 240, 197; cupressoides 240, 199; salicifolia 240, 199; Traversii 241, 199.

Viburnum 172; alnifolium 174; Awafuki 185; betulifolium 175; bithuiense 175; buddleifolium 175; burejaeticum 176; Carlesii 176, 2, 172, 173, 174; cassinoides 177; cinnamomaeifolium 177; coriaceum 178; cylindricum 178; dasyanthum 178; Davidii 179, 173; dentatum 179; dilatatum 179; foetidum 180; fragrans 180, 3, 172; Harryanum 181; Henryii 182; hupehense 182; japonicum 183; Lantana 183, 173, 174; Lentago 183; macrocephalum 184; macrophyllum 183; molle 184; nudum 185; odoratissimum 185; opulus 185, 172; opulus nanum 186, 172; opulus sterile 186, 173; propinquum 186, 173; prunifolium 187, 172; reticulatum 188; rhytidophyllum 187; Sargentii 188; Sieboldii 188; theiferum 188; Tinus 189, 172, 173; Tinus lucidum 189; Tinus variegatum 189; plicatum 190; tomentosum 190; tomentosum Mariesii 190; tomentosum plicatum 190, 172; utile 191; Veitchii 191.

Watering 10.

Wayfaring Tree 183, 173.

Weigelia 4; pruning 13.

Whitethorn 200.

University of British Columbia Library

DATE DUE

			NOV 3 REC'D
NOV 8 1965			NOV 21 1977
NOV 9 REC'D			
DEC 2 1965			NOV 31 REC'D
NOV 19 REC'D			
JUN 15 1967			
JUN 15 REC'D			
DEC 28 1967			
JAN 3 REC'D			
OCT 7 1968			
OCT 4 REC'D			
NOV - 8 1971			
NOV - 8 REC'D			
OCT 22 1974			
OCT 25 REC'D			
OCT 28 1975			

320045
SB 407

AGRICULTURE
FORESTRY
LIBRARY



C:\HANDBOOK\OF\FLOWERING\TREES\HAND\SHR

FORESTRY
AGRICULTURE
LIBRARY

